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ABSTRACT

This guide was developed for Ohio's Work SITE Learning Model, a national demonstration project for the integration of academic and vocational learning. The guide is designed to assist schools in conducting effective teacher worksite externship programs that allow teachers to observe workplace practices in order to glean information about academic applications. Following introductory materials that provide a rationale for the integration of academic and vocational education, definitions, benefits, and preliminary considerations, the guide offers 16 steps for developing and implementing a teacher worksite externship program. The guide also contains anecdotal reflections of project participants, and a list of 25 references. Thirteen appendixes, which make up half the document, provide the following samples from the project: tools for selecting worksite externship program participants; guidelines for developing a worksite externship team; a worksite contact sheet; examples of publicity for the worksite externship program; pre-visit correspondence; tools for worksite visits; tools for evaluating the worksite externship program; tools for recognizing and acknowledging contributions of business partners; an integrated instructional plan; an agenda outline for worksite externship visits; an annotated list of seven resources; samples of forms collected from worksites; and a sample Occupational Competency Analysis Profile. (KC)

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ED 411 439

Helping Teachers Connect Academics to the Workplace:

An Implementation Guide for Teacher Worksite Externships

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Helping Teachers Connect Academics to the Workplace: An Implementation Guide for Teacher Worksite Externships

The Ohio State University
Vocational Instructional Materials Laboratory
1900 Kenny Road
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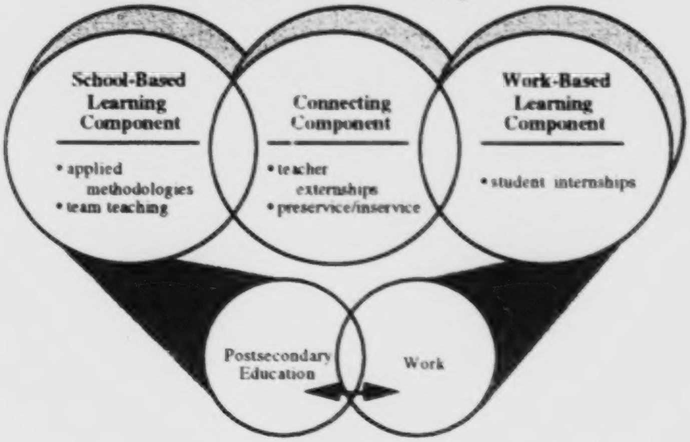
Work SITE Learning Model

Project Overview



Ohio's Work SITE Learning Plan

Figure 1

Project Overview

Ohio's Work SITE Learning Model is the product of a national demonstration project for the integration of academic and vocational learning, funded by the U.S. Department of Education. The model comprises three components. Help in replicating each of these components is provided through three implementation guides developed as part of this project:

- **Connecting Component:** To help ensure that teachers are prepared to serve as a link between the workplace and the school setting, teams of academic and vocational teachers should participate in short-term worksite externships focusing on the use of academics on the job. Those wishing to create teacher externship experiences can get assistance from *Helping Teachers Connect Academics to the Workplace: An Implementation Guide for Teacher Worksite Externships.*

- **School-Based Learning Component:** Following the externship experiences, teams have a more-solid basis for developing activities for the classroom and laboratory that require the use of academics within an authentic workplace context. Vocational teachers can also collaborate with academic

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classrooms the concrete, hands-on methodologies that have proved so successful with the vocational student population. Help in developing applied academic activities can be found in *Making Connections: A Curriculum Ideabook for Teachers of Applied Academics and Industrial & Engineering Systems.*

- Work-Based Learning Component: To reinforce for students the fact that academic skills are critical to success in the workplace — and are highly valued by employers — students, too, need to spend time in the workplace, focusing on the use of academics on the job. Early in the first year of a vocational program, teachers should arrange for student worksite learning experiences (SWLEs) through which students observe how academics are used in local business and industry, health care, government, or social service agencies. *Helping Students Connect Academics to the Workplace: An Implementation Guide for Student Worksite Learning Experiences* is designed to help schools develop SWLE programs.

The following improvements may result from these efforts to connect school and work:

- Teaching team members often become more united, enhancing their abilities to jointly assess how academics are applied to a given occupation.

- Teaching team members are more likely to collaborate in planning, preparing, and delivering academics that are integrated with occupationally specific education.

- Teaching team members are better prepared to structure meaningful student worksite learning experiences for their students.

- Students who have participated in SWLEs are more likely to understand the connection between academic and vocational studies — because they have seen it in practice in the workplace.

ACKNOWLEDGMENTS

This guidebook is the product of many people who committed their time and talents to help make it a useful resource for educators wishing to develop a teacher worksite externship program.

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Rationale for the Integration of Academic and Vocational Education

Over the past decade, education reformers have consistently made four recommendations:

1. The role of vocational education should be to make youth employable.
2. Employability skills can be attained best when vocational education complements academic education.
3. Academic and vocational curricula should be integrated and their coequal importance recognized.
4. Students should see the connection between academic skills they are required to learn and the world of work in which they will be required to apply them.

Curricular integration is an important method for implementing these recommendations. To achieve the full benefits of integration, vocational and applied academic teachers must work together as *teams*, and both teachers and students must understand how academics are applied in the workplace. Integration efforts may result in the following instructional improvements:

- Members of teaching teams employ hands-on teaching strategies, coordinate when specific topics are taught, and develop interdisciplinary assignments.
- Vocational teachers stress academics as they teach technical skills.
- Applied academic teachers provide opportunities for students to use academic skills in vocational contexts.

"I saw how we could better coordinate our efforts to reduce redundancy and also reinforce each other. We could use materials gleaned from worksites to develop classroom projects. In some cases, the projects will be team teaching efforts. The students will see our teamwork and apply it to their own experiences to develop team learning and team building with classmates."

Don Foster,
Electronics Teacher

"The TEAM is important because Together Everyone Accomplishes More!"

Pilot Project Participants

"The externship was most effective when all members of the team participated. At one site, the store manager arranged for all members to have duties. While doing these duties, the team built camaraderie."

Carey Whitacre,
Culinary Arts Teacher

Many educators and researchers, including those listed in the reference section of this guide, have found significant *benefits* resulting from the integration of vocational and applied academic instruction, including the following:

- Academic competencies are validated and related to the world of work.
- Employability skills are improved.
- Workers are better prepared.
- Student motivation is improved.
- The link between work and the need for lifelong learning is established.
- Students make more informed career choices.
- Basic skills are reinforced.
- Business, industry, and community-based organizations develop improved community relations.
- Schools, business, industry, and community-based organizations develop effective partnerships.

About This Guide

> "We cannot expect students to see the relationship between academic disciplines and problems in a vocational context unless teachers do."
>
> Gene Bottoms and Alice Presson, Southern Regional Education Board

The primary goal of the teacher worksite externship program is to provide teams of educators with opportunities to **observe workplace practices in order to glean information about academic applications.** This guidebook was developed for and piloted by teams of vocational and applied academic teachers. However, it can be used by any group of educators. For example, teachers of different subjects, teachers of different grade levels, and/or teachers of traditional and special needs students can comprise teams. To maximize the impact of worksite externships for the school and students, it is suggested that some teams also include a counselor, job placement coordinator, administrator, and/or school-to-work coordinator. In addition, professionals or volunteers who work with children outside of school, such as Boys/Girls Clubs of America, Girl Scouts of America, and Girls, Inc. can gain insights into the world of work by making worksite visits. It may also be appropriate to invite parents to join externship teams.

Information and insights gained during externships can provide the basis for revision or reorientation of curriculum to promote applied and correlated academic experiences for students and to reflect current practices in the workplace. Externships are not meant to provide teachers with technical training.

The externship process is important because teachers gain valuable insights through first-hand experiences at worksites. These experiences often result in increased motivation to design and implement classroom activities, exercises, and projects that are applicable to work. By providing students with experiences that reflect workplace standards and expectations, teachers can help students see the rigor, both academic and technical, that is required in the field they are preparing to enter. When teachers fold into the curriculum what they learn through externships, students are exposed to the type of communication, math, science, decision-making, and problem-solving skills that are used in daily work processes, and at the level of technical competence that will be required in the workplace.

In addition, externship programs are important because they give worksite personnel opportunities to talk with educators about the knowledge, academic skills, and attitudes that they expect from employees. The externship process allows representatives of business, industry, and community-based organizations to provide direct input into the curriculum, which helps to shape their future workforce.

This implementation guide is designed to assist schools in conducting effective teacher worksite externship programs. Its contents reflect information gathered through a national literature review, searching for best practices in school-business partnerships and teacher worksite externship programs. It was validated by Ohio vocational and applied academic teachers who participated in a pilot externship project. This document was then reviewed by the Grant Coordination Committee, which included business, industry, and labor representatives, teacher educators, administrators, vocational teachers, and academic teachers. It was also reviewed by key Ohio administrators. Its contents are meant to serve as guidelines and provide a variety of options. Each school will need to determine how best to implement a worksite externship program to meet individual needs, resources, and structures. The following definitions are presented to clarify the information presented in this implementation guide.

Definitions

Administrative Liaison: A school employee who is responsible for coordinating the teacher worksite externship program.

Applied Academics: Instruction that includes the use of methodologies, skills, and knowledge from several academic or vocational disciplines to facilitate the transition from school to work and to prepare students for lifelong learning and real-world problem solving. In other words, applied academics is putting relevance into what is taught.

Business: For the purposes of this document, the word business is meant to represent private business and industry as well as community-based organizations such as government, health care, and social service agencies.

Competency: An observable and measurable behavior that has a definite beginning and end; can be performed within a limited amount of time; consists of four or more competency builders; and leads to a product, service, or decision.

Competency Builders: The skills, knowledge, and attitudes, written in measurable terms, needed to perform a given competency.

Correlated Academics: Instruction that includes the use of methodologies, skills, and knowledge from an academic discipline or disciplines to complement the occupational skills in a vocational program. In other words, correlated academics is applied academics focused on one or more specific occupations.

Externship Team: A group of educators who visit worksites to observe how academics are used and then return to school to modify curriculum, instructional strategies, and/or procedures to prepare vocational students more effectively to enter the world of work. Externship teams should include one or more vocational teachers and teachers of applied mathematics, science, and/or communications. Teams may also include school counselors, administrators, school-to-work coordinators, and job placement coordinators.

Occupational Competency Analysis Profile (OCAP): A list of occupationally specific skills (or competencies) that are verified by individuals from business, industry, and community-based organizations who currently practice the occupation. Each OCAP identifies the technical, academic, and employability skills needed to enter a given occupation or occupational area. OCAP documents also contain Academic Job Profiles determined by the ACT Work Keys System. Excerpts from an OCAP are provided in, Appendix M, pp. 133-146.

SCANS: Required employment skills determined by the Secretary's Commission on Achieving Necessary Skills. The SCANS report states that effective workers need to productively use—

- resources (e.g., how to allocate time, money, materials, space, and staff);
- interpersonal skills (e.g., work in teams, teach others, serve customers, lead, negotiate, and work well with people from culturally diverse backgrounds);
- information (e.g., acquire and evaluate data, organize and maintain files, interpret and communicate, and use computers to process information);
- systems (e.g., understand social, organizational, and technological systems; monitor and correct performance; design or improve systems); and
- technology (e.g., select equipment and tools, apply technology to specific tasks, maintain and troubleshoot equipment).

In addition, SCANS identifies a three-part foundation of skills and personal qualities needed for solid job performance—

- basic skills (reading, writing, math, speaking, and listening);
- thinking skills (thinking creatively, decision making, problem solving, and knowing how to learn); and
- personal qualities (individual responsibility, self-esteem, sociability, self-management, and integrity).

Student Worksite Learning Experience (SWLE) Program: A structured, teacher-directed opportunity for vocational students to observe how academics are applied in the workplace. It is intended that students will participate in SWLEs early in the first year of a vocational program.

Teacher Worksite Externship: An experience in which teams of educators visit business, industry, and community-based organizations to observe current practices and glean information about how academics are used in the workplace in order to modify the program curriculum.

Team Coordinator: An externship team member who contacts one or more worksites to arrange team visits. The coordinator keeps team members informed about upcoming externship visits.

Work Keys System: Developed by American College Testing (ACT), Work Keys is a national system for documenting and improving generalizable workplace skills (i.e., applied mathematics, applied technology, reading for information, locating information, listening, writing, and teamwork). It provides individuals with reliable information regarding both their own workplace skills and the skill levels required in jobs. Academic Job Profiles determined through the Work Keys System are included in each OCAP document. Information about the Work Keys System is provided in Appendix M, pp. 144-147.

Worksite Contact Person: A person at the worksite who communicates with top management and the school's administrative liaison, arranges worksite visits, and provides support for the program.

Benefits

There is not much specific information in the literature about curricular integration through worksite externships. However, numerous studies of school-business partnerships have shown that there are significant benefits for all parties. Anticipated benefits of externships include the following:

- Students may become more interested in learning academic skills when they see the relationship between academic and vocational skills that are required for their chosen occupation.
- Businesses have opportunities to share their expertise and influence the skills, knowledge, and attitudes taught to potential workers.
- Businesses and schools have opportunities to enhance their public images through self-initiated communications and media coverage concerning their participation in the externship program.
- Team members have opportunities to work together—to learn about each other's perspectives.
- Team members have opportunities to gain information about occupations and global information about the industry (i.e., trends, impact of regulation and legislation, and general culture).
- Vocational and academic teachers have opportunities to become a strong team, enhancing the quality of education students receive.
- Teachers may learn new techniques for structuring classroom and laboratory study in ways that relate to the world of work.
- Teachers may have opportunities to learn more about structuring applied or correlated educational experiences for vocational students.
- Teachers may get reinforcement for current teaching practices and strategies.

"I learned that industry is willing to work with schools if asked. It is the responsibility of teachers to make contacts and utilize resources."

Carey Whitacre,
Culinary Arts Teacher

"I was surprised at the willingness of some companies to actively participate in any way I can use them in the classroom—speaker, demonstrator, etc."

Cathy Deardoff,
Communications Teacher

"The worksite externship was a positive experience for the entire team because it gave us an opportunity to function as a team."

Most Pilot Project Participants.

"I was with my teaching team for the first time in six years. I was very pleased to find out that, together, we were producing an employable product."

Pilot Project Participant

"We learned that business people want from their employees the same qualities that teachers want from their students: attendance, attitude, and accountability."

Most Pilot Project Participants

"We established many connections for student worksite learning experiences. In addition, we gained an increased awareness of all the technical positions available for employment for our graduates. There were goals we wanted to achieve as well as seeing how academics applied to the workplace. Our externship was a success!"

Bernadette Terry, Science Teacher

"The externship is an excellent opportunity for the school team to develop good public relations."

Pilot Project Participant

"This is an experience that all correlated instructors should have."

Beth Fisherback, Mathematics Teacher

- Team members may tap into professional expertise and technological advancements at worksites.
- Team members may receive instructional materials, supplies, and equipment from worksites.
- The school's reputation and public image may be enhanced.
- The school's resource base may be expanded.

"The teacher extern may be the first one-on-one contact that a front-line worker has with an educator."

Pilot Project Participant

"It made me feel good to be part of a process that was asking [business] what the school could do for them-not asking for equipment, to work on a levy, or be on an advisory committee."

George Combs, HVAC Teacher

"The entire experience energized me and affirmed the fact that what I teach is important and does apply. If this excited me, seeing relevancy to my curriculum, then what might it do for my students doing student worksite learning experiences?"

Bernadette Terry, Science Teacher

Preliminary Considerations

Before planning a teacher worksite externship program, considerable time should be spent determining the status of funding, assessing support for the program, and examining issues of liability.

Funding: In order to ensure the success of the program, adequate funding needs to be provided. The following questions should be considered:

- What will be the *source* of funding?
- Is funding *adequate* to meet the program's objectives?
- How much money is available to pay externs' *stipends* and/or to hire *substitutes*?
  - ✓ How many teachers will be able to participate?
  - ✓ Will teachers be paid a stipend if externships are not conducted during the school year? If so, how much? (Teachers across the country who participate in summer externship programs are paid about $100 per day.)
  - ✓ How many days of externship visits will the budget support?
- If changes in class *scheduling* are recommended in order to meet program objectives, will there be a cost?

Support: It is critical that the support for the externship program be assessed. Consider the following questions:

- Do *top-level administrators* value and support the program?
- Do *teachers* see the value of this activity?
- Will *advisory committee* members provide support?
- Do administrators and teachers support the *team concept*?

NOTE: Research indicates that the most successful programs involve teams of educators. When *teams* of vocational and applied academic teachers observe current worksite practices discuss their findings, and plan classroom applications, students are often provided with a higher-quality educational experiences. The inclusion of school counselors, administrators, and others may strengthen the effect of the program.

> "Our team got very excited about the possibilities available to us after the worksite externship experience. Unfortunately, looking ahead to next year, we have discovered that our schedules have changed and our team will not be together. Although we will be happy to pass along our ideas to those instructors who will be working with culinary arts students, the excitement cannot be passed on. The energy we cultivated through this experience was lost because the school administrator did not keep our team together."
>
> Susan Hyden,
> Communications Teacher

Scheduling: Another aspect of support to be considered is scheduling. The major problems facing teams of teachers who have participated in externships relate to scheduling:

- Applied academic teachers may be assigned to teach students in specific vocational areas one year and *reassigned* to other areas the next year. Without consistency in scheduling, applied academic teachers are not able to make changes in the curriculum that were determined by the externship team to be important.

  NOTE: Some schools have tried to compensate for this by having the original applied academic teacher share information with the newly assigned teacher. However, this has not been effective because the insights gained through first-hand experience in an externship cannot be adequately conveyed to others.

- The most successful teams are those in which applied academic teachers' schedules permit them time *to be in the vocational laboratory*. Teachers may spend time doing some or all of the following:

  - ✔ Observing how academics are applied in the lab setting, in order to develop applications in their own courses
  - ✔ Coordinating curriculum topics, determining timing of when topics will be taught, and collaborating on projects with the vocational teacher
  - ✔ Interacting with students
  - ✔ Learning vocational skills to discover how academic skills are embedded in specific processes (e.g., why and how measuring is used in construction, so that it can be reinforced in math class)

- Ideally, vocational and applied academic team members' schedules should include a ***common planning period.*** This allows them to coordinate their efforts and discuss issues related to applied academics as they arise. However, due to tight scheduling, this critical element is too-seldom provided.

Rewards and Incentives: Consider what kinds of rewards or incentives might be available to externs as a way of showing the school's support for their efforts. After all, considerable time and effort is involved in externship participation and curriculum modification. Input from teachers may be helpful in deciding which rewards and incentives would be most effective. Examples of rewards and incentives for externship team members include the following:

- Additional pay or stipends
- Continuing Education Units (CEUs)
- Graduate credit
- Framed certificates of participation signed by a school official or a member of the school board
- Personalized letters of appreciation and thanks from administrators, administrative liaisons, program supervisors, or others

Liability: Determine what liability issues may exist. If teachers and counselors are participating in externships during the regular school year, while they are on the regular payroll, school insurance should cover them. However, the case may be different for teachers doing summer and/or unpaid externships. ***It is important that each school system contact its legal counsel to determine whether the school, worksite, or individual is legally liable*** in the following situations:

- If a team member is injured in the workplace
- If a team member injures an employee or customer of a business
- If a team member damages a business's property
- If a team member is injured or causes an accident while traveling to a worksite

Steps to Developing and Implementing a Teacher Worksite Externship Program

To develop a successful teacher worksite externship program, the following steps should be taken. Although this is a sequential list, some of the steps can be done simultaneously.

Preparing for Externships:

1. Select an administrative liaison.
2. Select externship participants.
3. Determine the desired outcomes of the externship program.
4. Decide how the program will be structured.
5. Determine roles and responsibilities of externship program partners.
6. Develop implementation plans.
7. Determine the length, frequency, and range of the externship visits.
8. Secure externship sites.
9. Develop materials.

During Externships:

10. Team members participate in externships.

After the Externships:

11. Ask worksite representatives to evaluate the externship program.
12. Provide recognition and acknowledge appreciation to worksite representatives.
13. Conduct follow-up activities.
14. Conduct evaluation and follow-up with team members.
15. Modify curriculum and implement strategies to develop courses that are more applied and/or correlated.
16. Provide ongoing support for externship teams.

The following pages provide detailed suggestions for completing each step.

Step 1: Select an Administrative Liaison

The primary function of the administrative liaison is to provide ***support*** for educators and worksite personnel involved in the externship program. The liaison must have adequate ***time*** and ***motivation*** to carry out assigned responsibilities, which may include—

- selecting externs,
- helping teams develop goals and externship strategies,
- developing materials,
- conducting program evaluation,
- providing recognition to participants, and
- serving as a resource person for externship teams and worksite personnel.

In addition, it is important that the liaison have ***decision-making power*** concerning the program or direct access to those who do. (A detailed list of roles that may be assigned to the administrative liaison is provided in Step 5.)

"Our vocational supervisor provided us with the information to participate and the encouragement and enthusiasm to want to participate."

Bernadette Terry, Science Teacher

Step 2: Select Externship Participants

A key step to successful externship programs is selecting participants who will be effective team members. The following information may be helpful as schools decide how to choose externship participants who will carry the program forward.

Decide *who* will select externship participants. Will selection be done by school administrators? the administrative liaison? a selection committee (e.g., representatives from school administration, vocational teachers, academic teachers, job placement coordinators, and counselors)?

Determine how potential participants will be *recruited*; for example:

- Hold one or more informational meetings to describe the externship program to all educators who may be interested in participating.
- Ask potential participants to voice their interest in person or in writing.
- Invite specific teachers, administrators, counselors, job placement coordinators, and school-to-work coordinators to participate.

Determine how externship program participants will be *selected*. When deciding upon the selection process that will meet your school's needs, keep the following in mind:

- Keep application procedures and paperwork to a minimum. Pilot project participants strongly believe that requiring paperwork, applications, or interviews may become a barrier that will hinder some qualified, skilled people from participating in externships.

"I could handle my English classes easily as college prepared me for the classroom. But, I don't think anything else could really prepare me, as a communications teacher, better than working with not only the vocational teacher but the people who will one day employ my students. I feel more at ease now and better prepared for next year."

Julie Bains,
Communications Teacher

It is suggested that new teachers or counselors, those who are experiencing difficulties, those who would benefit from rejuvenation, and those who are enthusiastic about curricular integration be targeted for participation.

"The best thing that came out of this experience was the team development. There is never enough time to get together with other teachers to brainstorm ideas to benefit the program. Our team was able to come up with a variety of ideas for large projects which cross all three of our areas (math, communications, and culinary arts). For example, we plan to create a cookbook full of the favorite dishes which are served at our school restaurant. This project will involve portioning and sales activities in math classes and writing directions, doing layout, and editing in communications classes."

Culinary Arts Team Members

- Use an ***informal application*** process for a single school or a small school district. After learning about the program at an informational meeting or from an administrator, administrative liaison, or colleague, potential participants may either indicate their interest to the administrative liaison (orally or in a brief note) or be invited to participate.

- Use a ***formal selection*** process if the externship program involves educators across a large school system or if high interest is anticipated. After learning about the program, potential participants apply for participation in the program.

Applicants provide information to the selection committee either through an ***in-person interview*** or through a ***written application*** which is supplemented with an ***interview***. (Because it is difficult to gain qualitative information about potential participants without interpersonal interaction, and because some applicants may not be proficient writers, a written application alone is usually not adequate for selection.)

The purpose of written applications and interviews is to learn about applicants' qualifications and motivation for participating on an externship team. Applicants might be asked for background information including their—

- present position,
- past teaching experiences,
- future aspirations,
- education completed, and
- experiences working in business, industry, and community-based organizations.

In addition, applicants should be asked to describe their interest in the externship program including—

- reasons why the applicant wants to participate,
- outcomes the applicant would like to achieve, and
- activities in which applicant would like to participate.

During interviews, selection committee members can also learn about applicants' interpersonal communication skills, enthusiasm, motivation, and desire to accept the role of a learner.

To supplement the information learned about externship applicants through written applications and interviews, it may also be appropriate to ask program supervisors to provide input about their qualifications, competencies, and enthusiasm.

(An example of a written application and an interview form are provided in Appendix A, pp. 73-76.)

"At one point in time I was working with very hot grease following a store procedure. I recalled that, earlier in the year, I had sent a special needs student to this site to work at the same job. Now, I clearly realize how his disability caused him to be unsuccessful at this worksite. The job required memory skills and exact timing skills—which he did not have. For this reason, I believe the externship should include special needs counselors who are responsible for placing these students. The externship is excellent for identifying the skills needed in the workplace and career paths appropriate for each student."

Carey Whitacre,
Culinary Arts Teacher

"When I was first asked to participate in the teacher worksite externship, I had no idea of what to expect. The only reason I agreed to attend was I was told that this experience would help me, the applied academic teacher, in the communications classroom. I knew I needed and wanted anything that would help me reach my students better.

"Little did I know what laid ahead for me. I've spent 19 years alone in the classroom. This externship offered academic teachers in a vocational school an opportunity to work with colleagues not only vocational teachers, but also people in industry."

Julie Bains,
Communications Teacher

D. Form ***teams***. Remember, the goal is to select **teams** of educators who will work together to participate in externships and to plan Student Worksite Learning Experiences (SWLEs), modify curriculum, plan instruction, and collaborate in teaching upon their return from externships. Externs should believe in the program's objectives and should be motivated and enthusiastic about participating.

Administrators, the administrative liaison, and selection committee members should consider the following options for forming teams:

- Invite teachers who teach in the same program to participate as a team.
- Ask potential participants to apply in teams.
- Use accepted applicants as the core of each team, requesting that other teachers, administrators, and counselors who work with students from the same program participate, too.

Step 3: Determine the Desired Outcomes of the Externship Program

Team members should work together to determine the desired outcomes of the worksite externship program. They should consider what they want to gain from the externship experience; for example:

- Team members will observe how academics are used on the job to gain ideas for structuring the learning environment to reflect the world of work.
- Team members will gather forms, materials, and samples to be used in classroom and laboratory instruction.
- Team members will identify specific academic applications at worksites (i.e., when or where specific math, science, or communication concepts are used).
- Team members will develop teaching applications and strategies that will integrate academic concepts into the vocational curriculum.
- Team members will learn methods for implementing competencies in applied academic classes.
- Team members will identify potential student worksite learning experience, internship, co-op, and job placement sites.
- Team members will have opportunities to share perspectives, build trust, and collaborate.
- Home school counselors, guidance counselors, special needs counselors, program supervisors, job placement coordinators, school-to-work coordinators, and administrators who participate in externships will gain insights into the expectations for vocational students and entry-level employees.

"At the first site we visited, the general manager of a seven-store chain met us at 8:00 a.m. He had already planned how he would put all four team members to work. He put us in different stations with a rotation pattern. Throughout each experience, the team members had opportunities to communicate with employees and share ideas. The actual hands-on experiences proved to be more valuable than observation."

Carey Whitacre,
Culinary Arts Teacher

"My team member, an applied communications teacher, and I visited a local welding company. We spoke directly with the two co-owners. This company works as a subcontractor in manufacturing, doing custom work for larger companies. It was interesting to note the global impact a small town has. They had just completed a project for Beijing, China, and were working on a large project for a South African company during our visit. The owners explained the necessity of completing the job on schedule because it was scheduled to be transported on a ship on a specified date. If it wasn't ready by then, it would be several months before another ship would be available.

"This company is in the development stage and is continually changing. One of the changes they have recently undergone was the addition of computers to maintain better office records. This will also help them to estimate future projects by keeping track of costs of supplies, materials, and labor. The owners stated that one of the reasons for their continued growth is that they do a specialized type of work-stainless steel fabrication. The need for a high quality, specialized product was echoed throughout our externship experience. Employers need employees with a wide variety of skills such as welding, fabrication, using various pieces of equipment, reading blueprints, and doing mathematical calculations so that they can produce a quality product."

Ken Kirby, Welding Teacher

Step 4: Decide How the Program Will Be Structured

Once the desired outcomes are determined, the program should be structured so that those outcomes can be attained. When deciding upon the most appropriate program structure, consider the following questions:

A. *How many teams* will participate in externships during this academic year?

B. *Who will be on teams?* In addition to vocational and applied academic teachers, will home school counselors, guidance counselors, special needs counselors, program supervisors, job placement coordinators, school-to-work coordinators, or administrators participate?

C. *How many different worksites* will each team visit? In most cases, this should be determined by the team members because the number of sites visited will vary by vocational program. The number of visits should be sufficient to provide externs with exposure to a reasonable variety of the worksites that may be encountered by their students.

D. *How many days* will each team spend at worksites? In most cases, each team's desired outcomes and the range of worksites that are representative of the team's occupational focus will determine the number and length of worksite visits. Many externship program participants and administrators believe that a series of 3-5 visits is adequate to get an overview of the work environment and to determine how academics are applied in the workplace. (Additional information is provided in Step 7.)

E. *When* will externships be conducted — during the academic year or in the summer? Summer externships are usually conducted in a concentrated time period of one or two weeks. In contrast, externships that are conducted during the school year are usually spread out over a period of one or more months. The following list of positive and negative aspects of externship scheduling might help schools determine which option will work best.

"When the externship experience was done during the school year, as opposed to the summer, the students became involved in it. They were very interested to hear what we did at the worksites. They liked knowing that, in some instances, their teacher worked at the same job/site that they did. This communication exchange between teacher and student became a valuable learning tool as well as a relationship builder."

Carrie Hamilton,
Culinary Arts Teacher

"I feel this externship project should occur during the summer or when school is not in session. This would allow us to not have subs so that the education of our students wouldn't suffer."

Waid Lyons,
Agri-Technology Teacher

Summer Externships: Positive Aspects

- Externs may be less pressured by other job responsibilities.
- Externs may be able to be more focused on the externship experience.
- Teachers do not have to prepare materials for substitute teachers.
- Externs may be able to earn CEUs or graduate credit for participating in externships.
- Teachers can develop new curriculum applications before the next school year begins and integrate new academic concepts into their daily teaching plans.
- Externships may be easier to schedule when there are not conflicts with school schedules.

Summer Externships: Negative Aspects

- Externships may interfere with other work or family commitments.
- Schools incur the cost of paying stipends to participants.

Academic Year Externships: Positive Aspects

- It may be less expensive to hire substitute teachers than to pay stipends to teachers.
- It may be easier to schedule externship visits while all team members are on the same school schedule.

Academic Year Externships: Negative Aspects

- Using substitute teachers may create a break in instructional continuity.
- Having substitute teachers creates extra work for
- Visit extensions and last-minute visits to worksites may not be possible because substitute teachers may not be available.
- Teachers may not have time to work on curriculum revisions along with their day-to-day instructional responsibilities.

"I would highly recommend that externship visits be done in the summer. Teachers have too many distractions during the school year and would not focus and follow up immediately on each visit. Any additional cost would be warranted by having a positive worksite contact and gleaning academic skills as a team while the visit was still fresh in everyone's mind."

Pilot Project Participant

Step 5: Determine Roles and Responsibilities of Externship Program Partners

It is important to define the roles and responsibilities of the—

- worksite representatives,
- team members,
- team coordinators,
- administrative liaison, and
- nonteaching staff (e.g., job placement coordinators, counselors, school-to-work coordinators, and administrators).

In addition, it is important to determine when, where, and how these people will be oriented to their roles. Orientation is critical to the overall success of the teacher externship program.

A detailed list of possible roles of externship program partners follows.

> "The team members may need an in-service to understand the externship process. They may need an opportunity to talk with someone who has had this type of experience."
>
> Carey Whitacre,
> Culinary Arts Teacher

Roles of Worksite Representatives

The roles of worksite personnel participating in the externship program will vary greatly, depending upon many factors, including the type of business, the desired outcomes of team members, safety concerns, and liability limitations. Team members need to determine what they need from worksites in order to have successful externship experiences. Worksite personnel may, for example, be asked to perform some or all of the following functions:

- Designate a primary contact person to work with the externship coordinator to set up the externship visit.
- Support the primary contact person in arranging for additional employees to assist externs.
- Provide an overview of the worksite, its organizational structure, management philosophy, and personnel policies.
- Provide hands-on experiences for externship team members.

- Provide one-on-one shadowing opportunities for externship team members.
- Provide examples of a wide variety of jobs for externs to observe.
- Provide team members with copies of potential instructional materials (e.g., actual examples for forms, written communications, documents, manuals, evaluations, job applications, and pre-employment assessments). (Examples are provided in Appendix L, pp. 119-131.)
- Discuss ways in which mathematics, science, and communication skills are used by employees.
- Complete an Externship Program Evaluation.
- Provide feedback to the externship coordinator or the administrative liaison.
- Maintain contact with the externship coordinator or the administrative liaison.

Roles of the Administrative Liaison

The administrative liaison's role is to coordinate the administrative tasks associated with the externship process. The administrative liaison may have some or all of the following responsibilities:

- Select externship participants or coordinate the efforts of a selection committee. (Additional information is provided in Step 2.)
- Help to determine how the worksite externship program will be structured. (Additional information is provided in Step 4.)
- Provide assistance to teams upon request.
- Assist teams that have encountered roadblocks.
- Provide each team with copies of program OCAPs and ACT Work Keys job profile information.
- Develop written materials (e.g., evaluation forms, externship program brochure, newsletter articles, and press releases). (A list of written materials and the specific appendices in which sample materials can be found is provided in Step 9.)

- Coordinate scheduling of substitute teachers (if needed).
- Submit paperwork for CEU and graduate credit for externship participants.
- Distribute externship program evaluations.
- Collect, synthesize, and distribute evaluation information from team members and worksite representatives. (Additional information is provided in Steps 11 and 14.)
- Organize a recognition ceremony for worksite representatives. (Additional information is provided in Step 12.)
- Authorize stipends if appropriate.
- Authorize additional time or payment for further development of team's curricular applications.
- Encourage administrators to provide schedules that allow team members to work together during the current and future school years.

Roles of Team Coordinators

Each team should decide how externship responsibilities should be divided. Most teams find it helpful to have one or more team members serve in the role of ***coordinator*** to organize the activities of the team. Because of their knowledge of local worksites, vocational teachers are often asked by team members or the administrative liaison to serve as team coordinators. As a way of spreading out the responsibilities, some teams may choose to have a different coordinator for each externship visit. In other situations, a single coordinator may assign each team member one or more worksites to contact.

The coordinator might have some or all of the following responsibilities:

- Assign a specific responsibility to each team member (e.g., develop materials, gather documents, take notes, write thank-you letters).
- Work with team members to list desired outcomes, develop an implementation plan, and propose activities at worksites.

"When we were first asked to participate in the externship pilot project, our supervisor took care of the preliminary paperwork. At that point he let us go to set up our appointments and do any other preparatory work that we felt necessary. He met with us a couple of times to oversee our progress, but we felt in charge and were able to work freely. Being left alone to plan and work, teachers cannot help getting caught up in the entire operation of these worksite visits. They generated many thoughts, ideas, concerns and plans. In addition to gaining much information to work into our curriculum, the externship experience gave the team time and a focus for working together. Time to work together is something we rarely get at school. It felt great to have control to schedule our externship visits and subsequent activities."

Julie Bains,
Communications Teacher

> "The real joy was watching the math and communications teachers make applications of their curriculum to my students and develop activities to use in class. They used the phrase "I teach that!" several times each day. This project allowed us, as vocational teachers, to "show and tell" to our applied academic counterparts."
>
> Waid Lyons,
> Agri-Technology Teacher

- Contact worksites to arrange externship visits; in other words, "selling" the worksite representative on the externship project. (Additional information is provided in Step 8.)
- Maintain records on Worksite Contact Sheets.
- Request pre-visit background information from worksites. (Additional information is provided in Step 8.)
- Discuss the team's desired outcomes with the worksite contact person and each key person who will be assisting the team.
- Gather information about what the businesses do, how they are structured, and how academic skills may be applied on the job.
- Monitor the externship team's efforts, and provide support and encouragement to fellow team members as needed.
- Communicate regularly with team members.
- Coordinate meeting times of team members.
- Brief team members before each visit on how to dress, what safety gear may be required, the business's primary products and services, what jobs will be observed, and what to expect during the visit. (Additional information is provided in Step 10.)
- Take the initiative during visits to modify original plans as needed.
- Send thank-you letters, certificates of appreciation, and program evaluations, after each visit. (Additional information is provided in Step 12.)

Roles of Team Members

In their roles as team members, teachers, counselors, and administrators may have some or all of the following responsibilities:

- Make a commitment to participate fully as an externship team member.

- Perform the role of externship coordinator, if requested.
- Identify and list desired outcomes of the externship visits and subsequent activities. (Additional information is provided in Step 3.)
- Review OCAPs to determine which academic competencies the group will focus on. (It may be that team members will each have a different focus and will contribute their observations to the group.)
- Determine where team goals can best be met. Collaborate with team members to determine which worksites will provide the depth and breadth of information and experiences needed to achieve the desired outcomes. (Additional information is provided in Steps 7 and 8.)
- Meet with team members before each visit to learn about the worksite and what the focus and activities of the visit will be.
- Develop lists of questions, types of forms that can be used in the classroom, and whatever else may be needed. (Examples of tools that can be used during externship visits are provided in Appendix F, pp. 93-100.)
- Dress appropriately and wear personal safety gear (e.g., safety glasses, hard hats, closed-toe shoes) as required during externship visits.
- Arrive on time, participate fully, and ask questions of employees during externship visits.
- Maintain professionalism during worksite visits.
- Meet with team members to discuss what was learned and how it can be applied to classroom instruction after worksite visits. (Additional information is provided in Step 10.)
- Complete an Externship Evaluation and other evaluative materials as requested. (An example is provided in Appendix G, pp. 102-103.)

"As a correlated instructor, I actually didn't have any idea where to begin in terms of industry contacts. I guess I felt a little intimidated about contacting employers. I knew math was used in industry, but I wasn't sure how employers would feel about dealing with an academic instructor."

Beth Fisherback,
Mathematics Teacher

- Modify the curriculum to integrate academics into students' learning experiences by—
    - ✓ making it more clearly reflect workplace expectations and realities,
    - ✓ utilizing forms and materials gathered from worksite visits,
    - ✓ making as many hands-on assignments as possible, and
    - ✓ developing and implementing collaborative projects when appropriate.

(Additional information is provided in Step 15.)

Roles of Nonteaching Staff

The roles of nonteaching staff members, including job placement coordinators, home school counselors, guidance counselors, administrators, and school-to-work coordinators, will vary from school to school and will depend on the structure of the externship program and the composition of externship teams. Depending on their roles in the externship program, the responsibilities of nonteaching professional staff may include some or all of the following:

- Identify potential externship sites and names of contact people.
- Participate on an externship team.
- Modify practices and procedures to reflect the needs of vocational students as they prepare to enter the workplace.

Step 6: Develop Implementation Plans

The administrative liaison should meet with each team individually to help team members develop implementation plans. As a support person, the liaison can provide background information that will help participants decide what expectations and desired outcomes are realistic and what strategies may help them attain their desired outcomes. Together, team members should carry out the following tasks:

A. Decide how the team's efforts will be coordinated. Most teams have one or more coordinators. Team members may be elected, assigned, or volunteer to take on the coordinator role. Because of their familiarity with local worksites, sometimes vocational teachers agree to coordinate the teams' efforts. In other cases, in order to distribute the workload, each team member may agree to take responsibility for coordinating visits to one or more worksites. (For more specific information about the role of the externship coordinator, refer to Step 5.)

B. Determine which academic competencies the team will focus on. Team members' practical experience, as well as relevant OCAPs and ACT Work Keys job profiles, should be taken into consideration as teams prioritize competencies.

C. Based upon the desired outcomes, which are described in Step 3, team members should contribute to the list of what they want to see or experience. Depending on constraints of time and the availability of worksites, the list may need to be narrowed down. (Possible externship activities are provided in Step 10.)

D. Select the types of worksites that will provide the depth and breadth of information and/or experiences desired. If possible, the externship visits should include the range of worksites that hire employees in the occupational area that the team is focusing on. Team members should consider a wide variety of characteristics of potential worksites including—

"Looking back, I feel the team needed to identify goals first so that they have an idea what they are looking for. In addition, everyone should have had responsibilities preparing for visits to the job site."

Carey Whitacre,
Culinary Arts Teacher

- products or services offered,
- size,
- location,
- career paths,
- opportunities for advancement,
- management style, and
- appropriateness of worksite for future SWLE, internship and co-op placements.

(Guidelines for developing an implementation plan are provided in Appendix B, pp. 77-78.)

Several pilot project externship teams structured their plans as follows:

Food Service Team Members

- ✔ Visited five different levels of food service providers to determine quality and quantity of academics used in the food industry. Each visit was 4-5 hours long.
- ✔ Performed hands-on work in the kitchens and restaurants. Half of the team members performed tasks of entry-level employees, while the other half observed, collected materials, and interviewed employees.
- ✔ Gathered recipes, menus, and other written materials that could be used in the classroom and laboratory.
- ✔ Used findings in applied mathematics, science, and communications classes.
- ✔ Developed an interdisciplinary project involving the production of a student cookbook.

Health Care Team Members

- ✔ Made a "wish list" of 16 different medical departments they hoped to see.
- ✔ Sent the wish list to their contact person at a local hospital.
- ✔ Made observations at the 16 departments designated on the wish list over a 5-day period, for 2-3 hours each.
- ✔ Used findings in applied mathematics, science, and communications classes.

Welding Team Members

- ✔ Developed a checklist of the major ways in which written and oral communication might be used in the workplace. (An modified version of their checklist is provided in Appendix F, pp. 99-100.)
- ✔ Selected six worksites that reflected a representative range of the local welding industry.
- ✔ Visited each worksite for 2-3 hours.
- ✔ Used the checklist to write observations and collect samples of forms and documents at each worksite.
- ✔ Used findings in both communications and welding class activities.
- ✔ Created collaborative projects.

The following reflections were made by pilot project participants at a debriefing meeting:

> *"The medical technology teacher on our team arranged for us to visit a major hospital in our area. She made the contact with a phone call. Then the team met and discussed the areas in the hospital we would like to see; we developed a "wish list." A second contact was made with the hospital and our wish list was forwarded. The hospital then faxed us a very comprehensive agenda for our week long visit. They made every attempt to meet our needs. They arranged for us to observe 16 different departments in the hospital in one week spending about eight hours there each day. They had a contact person set up for each department to greet us. The departmental contact people asked us what we were looking for so they could meet our needs in the time allotted. They usually talked to us about the areas, introduced us to the employees, and collected as many materials as possible for us to have."*
>
> *Bernadette Terry, Science Teacher*

"My team spent two days making observations at a large aerospace plant. The first day was spent at the aviation landing lights repair facility. The second day was spent at the manufacturing facility. On day one, the team met for breakfast to discuss the specifics of the company and the approach we intended to use. We then drove to the facility. We were greeted by a female manager, who led us through the plant to a meeting room. After a lengthy discussion of the facility's operations, we were introduced to the other managers and toured the plant.

"My expectations as we toured the facility were that I would be able to see for myself what science needs to be taught and find new applications for my current curriculum. For the most part, my expectations were met. We were able to talk with technicians and ask our host of questions.

"On day two, much like yesterday, we were met by a representative who treated us with a high degree of professionalism. However, this is where the parallel ended. This representative had the wrong idea about our reason for visiting. I felt that we were being subjected to the "standard" tour of the facility. The representative had scheduled our entire day. The tour was nice, but was a waste of time. The problem was how to get out of this in a way that wouldn't insult the company. We had followed the planned schedule until 2:15 p.m. Our representative seemed as frustrated as we did. She had trouble locating our next contact person—a salesperson. At that point, I told her that I thought we should call it a day. I asked for a business card so that we could contact her in the future. We thanked her for her time and left.

"Upon reflection, I would have liked to be able to set at least the second half of the day's agenda so that the team's objectives for the day could be met. Maybe at lunch, we could have discussed the possibilities for afternoon activities with the company representative."

Mike Pottmeyer, Science Teacher

Step 7: Determine the Length, Frequency, and Range of the Externship Visits

Length of visits may vary, depending on the team's desired outcomes. For example, if a team is to gain a broad understanding of the academic applications at a wide variety of worksites, a series of half-day or full-day visits may best meet their needs. Conversely, if they want to gain a deep understanding of how academics are used in specific jobs in different departments of a large organization, spending several days at one location would be appropriate.

Frequency of externship visits usually depends on whether visits are conducted during the summer or the academic year. Teams that participate in externships during the academic year generally prefer to spread out their visits over several weeks or months. Summer externship participants often prefer to make externship visits in a more concentrated period of time (e.g., 1 or 2 weeks).

Team members need to determine the *range* of externship visits by considering the range of local employment options available to their graduates. The variety of worksites will vary among vocational areas. For example, the culinary arts pilot project team visited a full-service and fast food restaurants, a country club, and a bakery, as well as a catering service and a vending company. Pilot project externs in agri-technology visited a large animal feed corporation, a fertilizer dealership, an equipment dealer, a crop production farm, a family-owned corporation specializing in livestock, and a sludge treatment plant.

"Our worksite experience at a large aerospace manufacturer involved a two day visit that encompassed both the manufacturing and servicing of electronic equipment for aircraft. We were provided an overview of how personnel and management conducted day-to-day business including attendance, benefits, communications, and training. Following that, we were given a tour of the facilities. We met with electronic analysts, electronic technicians, and assemblers. It was interesting to note that analysts and technicians were men while the repair technicians or assemblers were women. When we commented about our observation, we were told that manual dexterity tests tend to favor women in the assembly-type positions. Overall, there is a shortage of qualified technical labor.

"The next day was spent in the design and manufacturing plant. We were given another tour, where we saw the various technologies used in the process. We talked with electronic technicians who were involved in testing and production and engineers who design the product (circuits). The employees in this plant are overwhelmingly male. As we were ending our visit, the contact person, who is the only woman engineer, encouraged us to guide young women to consider engineering and technical fields. Several people at the worksite made similar comments."

Dianne Light, Mathematics Teacher

Step 8: Secure Externship Sites

In order to ensure that the team's expectations are clear and that desired outcomes are met, it is important that each team arrange its own site visits. Externship arrangements can be facilitated when each party—externship team and worksite—designates a ***contact person*** to arrange and coordinate the visit. This greatly increases each party's ability to reach the other directly and simply when there is a need to ask questions or convey information. For the externship team, the ***team coordinator*** usually serves in this role. In securing externship sites, team members should work together to carry out the following tasks:

A. ***Identify potential externship sites*** from a wide variety of sources; for example:

- Vocational and applied academic teachers
- School employees, including counselors, job placement coordinators, school-to-work coordinators, and administrators
- State associations (e.g., State Manufacturing Association, State AFL-CIO, State Restaurant Association)
- Local business, industry, and labor organizations (e.g., AFL-CIO local central bodies, labor unions, and chambers of commerce)
- Local leaders of business, industry, labor, and community-based organizations
- Professional organizations and societies
- Local civic service clubs
- Advisory committees
- Personal contacts
- School alumni
- Yellow pages advertisements

> "Since we teach students who will be working in the health care field, our team felt that doing our externship in a large hospital/medical center would be most beneficial. We knew we could see many different fields and occupations under one roof. We were eager to see how communications, anatomy and physiology, and medical skills were applied in the workplace. This worksite turned out to be a great choice to see all of that and more!"
>
> Cheryl Volkmer,
> DCHO Coordinator

> "Upon reflection, there was one thing I would have liked to do differently. Our supervisor set up our visits, which created some problems. The worksite contact person called me, requesting information that I didn't have. At the visit, there are things that the supervisor didn't know about our team and its goals. This suggested that I, as the vocational teacher, should have made the contact because I understand this type of worksite. By making this change, communication would have been more direct and accurate."
>
> George Combs,
> HVAC Teacher

B. Using the information provided by those who suggested potential externship worksites, ***narrow down the list*** by considering the following questions:

- Can the site provide the experiences needed by the team members? For example, will the team be exposed to applications of academics? Is it representative of what students will encounter?
- Can the site provide a wide variety of experiences?
- Does the worksite exhibit support and enthusiasm for the program?
- Will the worksite be able to provide the needed support for the team?
- Will the worksite provide safe working conditions?
- Is this worksite a potential placement site for SWLE, internship, and/or co-op experiences?
- Is this worksite in a geographic location that will conveniently allow students to get there for SWLE, internship, or co-op experiences?
- Is this a good time to visit the worksite?
  For example, is there a seasonal down time or rush time, a time when most employees take vacation, or a scheduled lunch hour?

C. Determine the appropriate ***contact person*** at each potential externship site. If team coordinators do not have the name of a contact person at each worksite, they can start by contacting the human resources departments for the names and phone numbers of the most appropriate people in the worksite to arrange externship visits. Depending on the structure of the organization, the best contact person may be a manager, director, front-line supervisor, or company owner.

D. Once the most appropriate person to help arrange an externship visit at each site has been determined, the coordinator should *call or meet* with the contact person at each targeted worksite. During one or more conversations, the coordinator should, at a minimum, discuss the following items:

- Summarize the purpose of the team's externship program, explaining that the team wants to learn what academic skills employers will expect vocational graduates to possess.
- Point out how the visit will benefit the worksite in the long run by providing opportunities for enriching the educational experiences of their future workers.
- Describe the team's desired outcomes, including how what is learned will be applied in the classroom and laboratory.
- Explain clearly that the team wishes to observe and speak with people who are actually *doing* the jobs that team members are training students to perform.
- Ask if it would be possible to provide team members with hands-on experiences or one-on-one shadowing in order to gain insights into how academics are used in the workplace.
- Verify that the experiences to be provided by the worksite will match the team's desired outcomes.
- Agree upon the day and time of the visit and activities of the externship team. Visits are usually scheduled to occur 7-10 days after an agreement has been reached with the contact person.
- Obtain names, titles, and direct phone numbers of others at the worksite who will be assisting the team.
- Discuss appropriate, safe dress for the work environment. Find out whether team members will need to provide safety glasses or hard hats or to wear specific safety clothing.

"When setting up times for visitations, we learned that the worksite must be considered. Our visit to a bakery was scheduled for the afternoon. Upon arriving, we realized we should have visited this particular worksite in the morning, when it was most active. Our experience would have been much more beneficial to both us and the business. There just wasn't too much happening at this bakery at 3:00!"

Carrie Hamilton,
Culinary Arts Teacher

HINT: Remember that school hours and business hours may be different from each other. In order to visit sites when businesses are fully active, externships may need to be scheduled during nonschool hours.

"If I had it to do over again, I would change just a couple of things. First, we should have a scheduled 15 minutes at the beginning of the day to confer about the day and what we would be seeing and then do the same thing at the end of the day to debrief. Our hectic schedule gave us little time to discuss or "regroup." Secondly, I would have made sure that each department head knew what our objectives were. This could have been accomplished through a phone call from one of the teachers on the team, by sending a written set of objectives ahead of time, or (as a last resort) by handing them a written set of objectives as we entered each department. Instead, we found ourselves explaining our purpose at each new area."

Cheryl Volkmer,
DCHO Coordinator

- Determine whether the team should be aware of environmental safety issues (e.g., X rays, fumes, pesticides).
- Discuss liability coverage.
- Discuss labor union concurrence with the plan, if appropriate.
- Request some information about the worksite. If a profile sheet is available, ask that a copy be provided to the team coordinator.
- Get specific directions to the worksite, including where to park and which entrance to use.

Information obtained through this conversation can be recorded on a Worksite Contact Sheet. (An example is provided in Appendix C, pp. 80-82.) Later, contact sheets can be copied for team members so that the information can be used for follow-up correspondence, SWLE program preparation, and classroom activities, and to document team activities.

HINT: In order to assure that the team's desired outcomes are met, the coordinator should be sure to discuss the visit with *each person* who will be hosting the externship team. For example, if the contact person arranges for a department supervisor to work with the team during the visit, it is important that the team coordinator speak with that person prior to the visit to summarize the team's desired outcomes, confirm the arrangements, and answer questions that may arise.

To ensure that the worksite representatives understand what the team's goals, needs and expectations are, the team coordinator should mail or fax a ***confirmation letter*** that describes the arrangements that were agreed upon and includes the names and titles of team members. (An example is provided in Apendix E, p. 91.) Send written confirmation to the contact person at the worksite. In addition, if the worksite contact person agrees, send written confirmation to the front-line workers who will be hosting team members. Make a copy for the administrative liaison and other school officials as appropriate.

"During our visits, we were often asked to explain our purpose. I wish we would have sent a statement of purpose and intent to each person we would be in contact with. This would have saved us a good amount of explanation and would have primed them for our questions."

Eric Worstell,
Communications Teacher

HINT: When setting up the daily externship schedule, pilot project participants found that planning and allowing time for *pre- and post-visit team meetings* enhanced the quality of the visits and the externs' experiences. (See Step 10 for detailed information.)

"At one worksite, the supervisor took the team to his office and talked to us for three hours. We then went on a quick tour of the plant and the visit was over. Not much was gained from the visit. As the vocational teacher in the team, I wanted to know more, so during the tour I slipped away and talked to a technician for several minutes. During this quick interview, I learned a lot of positive input that will help me teach more effectively.

"When setting up a visit, I advise others to be sure to let the worksite know that you will need to talk with the workers one-on-one."

Don Foster,
Electronics Teacher

Step 9: Develop Materials

The following materials can be developed and used by the administrative liaison, team coordinators, and team members. (The appendix noted beside each item contains examples that can be personalized and adapted for use by externship program participants.)

- Externship Participant Application (Appendix A, pp. 74-75)
- Externship Interview Form (Appendix A, p. 76)
- Worksite Contact Sheet (Appendix C, pp. 80-82)
- Promotional Brochure (Appendix D, pp. 84-85)
- Pre-Visit Correspondence (Appendix E, pp. 90-91)
- Worksite Interview Questions (Appendix F, pp. 94-96)
- Externship Visit Log (Appendix F, pp. 97-98)
- Externship Visit Checklist (Appendix F, pp. 99-100)
- Worksite Evaluation of Externship Program (Appendix G, pp. 104-105)
- Team Member Evaluation of Externship Program (Appendix G, pp. 102-103)
- Thank-You Letters (Appendix H, pp. 108-109)
- Certificate of Recognition (Appendix H, p. 110)
- Press Release (Appendix D, pp. 86-88)

Step 10: Team Members Participate in Externships

In addition to the team members visiting worksites to make observations about how academics are applied, the most successful externship visits also include pre-visit and post-visit activities. Each aspect of the externship visit is described below. (An agenda outline is provided in Appendix J, p. 114.)

A. *Before each externship visit*, all team members should meet to do the following:

- Become familiar with the worksite they will be visiting. This is most easily managed if the team coordinator provides each member with an overview of the business's products and services, organizational structure, and what can be expected during the visit. Copies of written materials including Worksite Contact Sheets, business profile sheets, and brochures about the worksite should be given to each team member.
- Receive a copy of the externship visit ***agenda***, if available.
- Review OCAPs to determine the ***academic competencies*** that the team will be focusing on. (Excerpts from an OCAP are provided in Appendix M, pp. 133-147.)
- Compile a list of the ***questions*** to ask during the visit.

HINT: Pilot project participants found that asking specific questions yielded more positive results. For example, instead of asking "How do you use science?" try asking "How do you use hydraulics?"

"This experience taught me that technicians may not always be able to verbalize what science they use, but that they are very good and willing to share what they do. Future externship participants may need to extract their curriculum ideas from employees' descriptions of what they do."

Mike Pottmeyer,
Science Teacher

"The work ethic we observed in the workplace was excellent. As professionals visiting worksites, we must also display excellent work ethics. It was important that we show up on time, dress appropriately, and interact professionally and effectively."

Susan Hyden,
Communications Teacher

- Become aware of the *safety-related conditions* that may exist at the worksites. Coordinators should brief team members concerning environmental conditions (e.g., fumes, X rays, pesticides); appropriate and safe dress (e.g., clothing, jewelry, hair); and required safety apparel (e.g., hard hats, safety glasses, lab coats).

B. *At the beginning of each visit*, one or more team members should be prepared to briefly describe to worksite personnel the purpose of the externship program and state the team's goals for visiting this particular worksite. This overview should include the fact that the team is visiting to learn what the company needs, pointing out the long-term benefits to business for providing support to the externship team. In addition, this is a good time to exchange business cards and to share written materials, the school's curriculum guides, or brochures and public relations materials, if appropriate.

C. *During each externship visit*, team members should observe the following guidelines:

- Walk into each worksite with a firm *plan* — and be open to modifying it. Some visits may be longer or more involved that planned — others may be briefer.
- *Listen*, *observe*, and *ask questions*.
- *Dress* professionally and for safety (e.g., hard hats, safety glasses, closed-toe shoes).
- Bring a *camera* so that pictures of workplace applications can be taken, if allowed.
- *Act professionally*, knowing that the school's reputation and future working relationship can be enhanced through the externship program.
- Display *enthusiasm* and eagerness to learn.

"As educators, we observed how important it is to dress professionally and in kitchen uniforms. We observed that when a crew wore professional attire, a professional attitude followed for all! This professionalism in attire must be followed in the laboratory school experience."

Susan Hyden,
Communications Teacher

"I wish our team would have developed a clearer picture of what we would be doing before we went on the externships. It would have been extremely helpful to meet before each experience to review the day's activities and discuss important things to look for and ask about. I would also have had our team meet after each visit to debrief. This type of quality time spent immediately after our visits would really have helped us develop deeper questioning about the activities we saw. Often, the activities seemed redundant. I'm certain that had we explored them on a daily basis, we would have gotten to a different level of insight."

Eric Worstell,
Communications Teacher

D Externship activities can include but are not limited to the following:

- *Tour* a wide variety of departments at the worksite to get an overview of the company.
- *Interview* people at various levels in the organization—speaking with people in a wide range of positions, including human resource manager, first-line supervisor, front-line employee. (Examples are provided in Appendix F, pp. 93-100.)
- *Observe operations* and ask spontaneous questions.
- *Observe people* doing their jobs.
- Ask specific questions, extract information concerning application of academics in the workplace, and deduce how similar applications can be made in the classroom.
- Perform hands-on tasks.
- *Collect written materials*, forms, manuals, etc.

NOTE: Simply asking people at worksites to provide examples of academic applications in the workplace has not been found to be an effective strategy because many employees seem to take those applications for granted and can't identfy them offhand.

E. *At the end of each visit*, team members should spend at least an hour to—

- *discuss* worksite observations and draw conclusions,
- *review* OCAPs and other materials to determine what academic competencies were observed,
- *share ideas* for developing workplace applications, and
- *assess* the effectiveness of the visit and discuss ways in which future visits can be improved.

"We arrived at the country club kitchen, which was so small that the two of us felt in the way at times. We spent the majority of the day talking about collaborative ideas and how what we saw and experienced applied to our OCAPs and, ultimately, lessons in our classrooms. We also made copies of several of the posters on the wall. We decided to assign a cookbook project during the next school year. This project will integrate math, writing/communications, and lab work."

Jenny Souders,
Mathematics Teacher

"After the visit in the shop, the supervisor took us to a local factory where they were installing a flue assembly on a boiler. As we entered the factory, we were instructed to wear safety glasses. The math teacher had a chance to see ways in which layout and measurement were involved in flue assembly. The science teacher could see where heat was a factor in the layout."

George Combs,
HVAC Teacher

"During our visits, we questioned our hosts about how communication and science were applied in their areas. For instance, the pharmacist showed us his experimental drug study and pointed out the complexity of the directions used in administering the drug. He discussed the importance of being able to read and document. His discussion reinforced our beliefs and buoyed our spirits with the thought that some of our students will be shadowing him."

Eric Worstell,
Communications Teacher

"Half of our team worked in the kitchen while the other half spent the morning observing operations and talking with the manager. As the manager worked, we asked her questions. This conversation led to more interaction and expanded the topics we discussed."

Jenny Souders,
Mathematics Teacher

It is recommended that team members put externship information in a three-ring notebook. It might include the following materials:

- *Company profiles* and literature
- A *log* that includes worksite name, date visited, name of contact person, observations, comments, and insights (An example is provided in Appendix F, pp. 97-98.)
- *Checklists* and accompanying *notes* (An example is provided in Appendix F, pp. 99-100.)
- *Forms* collected at worksites (An example is provided in Appendix L, pp. 119-131.)
- A *list of different careers* and career paths that were observed at worksites
- Ideas for making *classroom applications* of activities or procedures observed at worksites (A sample of an integrated instructional plan is provided in Appendix I, pp. 111-112.)
- Ideas for *collaborative projects* with other team members
- An ongoing list of *questions* to ask at externship sites (An example is provided in Appendix F, pp. 94-96.)
- Notes concerning possible *student placements* at the worksites that were visited for externships

The following reflections were made by pilot project participants at a debriefing meeting:

"We visited a country club and were met by the chef. He gave us a facility tour and then he took us into his office. His office was filled with thousands of books—cookbooks, culinary trend books, nutrition books, and management textbooks. He had a computer as the focal point of his work area. He explained his main food distributor had a program for ordering, which he used. He could pull up an item and find the price he paid, the last time he ordered, the last order date, the cost per portion, and the percent of price charge. All items the distributor offered were on this program. It was great to see technology used so well in food service. The communication and math instructors were very interested in this computer program; we have some solid ideas for integrating it into our curriculum. We would like to try and acquire the actual program and have culinary students do mock ordering and then place an actual order."

Carrie Hamilton, Culinary Arts Teacher

"The sous chef at the country club (assistant chef in charge of food production) came into the chef's office while we were in there. He looked through at least five cookbooks. We asked what he was doing. He explained how some books were "user friendly" and some had long processes. He was combining methods and ingredients from many sources to create his own recipe. The chef commented that the sous chef was particularly good at this, so the chef gave him many opportunities to fine-tune this skill.

"From this I learned that many sources are used in cooking. The ability to read, decipher information, and adjust measurements is very important. I also learned that, just like at other worksites, management style can impact the creativity and effectiveness of employees."

Carrie Hamilton, Culinary Arts Teacher

"The plant manager took us on a tour of the facilities. This wasn't just an ordinary tour. He would stop the employees and explain exactly what math and communication was being used. This company mixes feed, so the employees must weigh and then combine the ingredients. They use some medications, so they must be very accountable for the exact amounts being used. The documentation has to constantly be updated and then forwarded for someone else to use."

Beth Fisherback,
Mathematics Teacher

"After each visit, our team met over lunch and discussed how what we saw applied to our OCAPs. We got more and more ideas for lessons in the classroom. Having lunch to discuss what was happening was very effective."

Jenny Souders,
Mathematics Teacher

Step 11: Ask Worksite Representatives to Evaluate the Externship Program

Valuable information can be gained through feedback from the worksite personnel who participated in the externship program. By offering contact people an opportunity to evaluate the program, externship organizers can obtain suggestions for improving the externship experience. In addition, by being asked to provide input, worksite participants receive the message that schools value their opinions and respect their perspectives.

- Depending on how the school has chosen to define roles, either the administrative liaison or the team coordinator should request that the worksite representatives complete a program evaluation.
- Ask contact people (and others if appropriate) to complete a brief written evaluation. Ask questions to solicit information about their reactions to the externship program, the reactions of other employees and managers, their perceptions of the program's benefits, their suggestions for improving the externship process, whether they would be interested in participating in future years, and whether they would be willing to provide student placements for upcoming SWLEs. (An example is provided in Appendix G, pp. 104-105.)
- Be sure to provide a stamped, self-addressed return envelope if completed evaluations will be returned by mail.

Step 12: Provide Recognition and Acknowledge Appreciation to Worksite Representatives

It is important to take time to recognize the contributions that worksite representatives have made to the school, the teachers, and the students who team members serve. Recognition activities send the message that the time spent with externship team members was important and appreciated. In addition, recognition activities provide schools and businesses with opportunities to enhance their public relations with the community and with each other. The following suggestions may help the administrative liaison and team members decide upon the most appropriate and productive ways to say thank you. (Examples are provided in Appendix D, pp. 87-88 and Appendix H, pp. 107-110.)

- The administrative liaison and/or team coordinators should type ***thank-you letters*** to the primary people who worked with team members at each worksite. If appropriate, they can add a personal, handwritten message at the bottom of the letter, on an attached sheet, or on a self-sticking note. This type of letter is often placed in employees' personnel files. Letters may be signed by the coordinator, all team members, or individuals.
- Along with the thank-you letter, send a ***framed certificate of recognition*** to the primary people who worked with the team at each worksite. Many employees find this type of recognition especially rewarding. Don't be surprised to see your certificate on the wall during a return visit.
- Write a ***press release*** and send it to local newspapers. Gaining recognition for serving education and the community is the kind of publicity that businesses can't buy — but it goes a long way toward enhancing their image with the public. It may also encourage other businesses to contact the school about participating in the externship program and other partnership activities.

- Invite all people who helped with worksite externships to a ***reception, open house, board meeting, advisory committee meeting, or dinner*** at which time a recognition ceremony is held to demonstrate the school's appreciation. If appropriate, ask representatives of the vocational student organization (VSO) to coordinate and host the recognition program.
- Include information about the externship program, including the names of worksites that supported externships, in the school's ***yearbook, promotional brochure, newsletter,*** and other written documents.

Step 13: Conduct Follow-Up Activities

The purpose of follow-up activities is to help team members keep in touch with the worksite personnel who were involved with externships. Follow-up activities may result in benefits to schools, including increased opportunities to receive support and resources from worksites. Follow-up activities may be initiated by individual teachers, teacher teams, or the administrative liaison. The media should be informed in advance of each activity. Consider activities such as the following:

- Call or write to contact people to keep them informed about modifications in the curriculum. When possible, connect the changes to observations made during externship visits.
- Invite worksite contact people to the school to see the facilities and review the curriculum for potential academic applications.
- Invite worksite contact people to the school to shadow teachers for all or part of a day.
- Send photographs of students doing projects, descriptions of class assignments, and/or a copy of the curriculum with a letter or note explaining how the information gained during the externship visit was used.
- Invite contact people and others from participating worksites to be guest speakers.
- Invite contact people and others from participating worksites to participate in other business-school partnerships (e.g., attend career day activities, judge VSO competitive events, serve on advisory committees).
- Send a summary of the externship evaluations to worksite contact people.
- Correspond about plans for future teacher worksite externships and student worksite learning experience activities and solicit their participation.
- Develop a mailing list or add names to the current school mailing list. Send public relations materials and information that shows how the curriculum is changing to more accurately reflect the workplace.
- Invite worksite personnel to the annual school open house, VSO events, and special programs.

"During an interview with an electronic technician, we learned that he had served as a substitute electronics teacher in our program several years ago. We invited him to the school to see how the program had evolved. He volunteered to bring equipment, schematics, and repairable products as a way to help explain to students about what it takes for electronic repair technicians to be successful on the job. He also might be a qualified substitute for a vocational teacher. (E.T. subs are hard to find!)"

Don Foster,
Electronics Teacher

"After hearing about the numerous ways in which they use math at their farm, I asked our hosts if they would be willing to speak to my math class. They both agreed. I think this will be great for my class to hear from people who are working at jobs in their occupational area."

Beth Fisherback,
Mathematics Teacher

Step 14: Conduct Evaluation and Follow-Up with Team Members

The easiest and most relevant type of team evaluation is a written summary indicating—

- what the desired outcomes were;
- what was learned—related to the desired outcomes;
- what was learned—in addition to the desired outcomes; and
- how what was learned will be applied to the curriculum.

(An example is provided in Appendix G, pp. 102-103.)

To help ensure ongoing support for their efforts, it may be helpful for team members to meet with administrators and the administrative liaison to describe their experiences and share plans for modifying the vocational curriculum to reflect the integration of academics. In addition, it may be appropriate for the liaison and team coordinators to make a presentation to the school board. Such activities may result in additional resources being provided to team members for curriculum development. At the end of the school year, team members should meet with administrators and the administrative liaison again to describe the changes that were made in the curriculum and discuss their impact on student outcomes.

Step 15: Modify Curriculum and Implement Strategies to Develop Courses That Are More Applied and/or Correlated

Externship team members need to decide *how* the information obtained from worksites will be used. In other words, they need to figure out the best way to translate externship experiences into changes in the classroom. Team members should decide which logistics, actions, and/or systemic changes can be made to ensure that the curriculum for vocational and applied academic courses is modified to include increased quantity and quality of applied and/or correlated instruction. Team members should determine which academic competencies were observed and develop applications for those competencies. They might review OCAPs to identify competencies that are critical to success in the workplace. Instructional applications might include the following:

- Use worksite *examples* when discussing principles with students.
- Use *forms* gathered at worksites to help students practice academic skills with authentic materials.
- Develop classroom *policies and procedures* that will help students attain employability skills that are important to workplace success (e.g., attendance policy, late assignment policy).
- *Coordinate* with other teachers concerning *when* topics are taught to provide students with prerequisite skills. For example, one team member might teach students about compression in engines during February. Because students need to understand ratios when they study compression, the math teacher agrees to teach ratios in January.
- Collaborate with a team member to *develop a joint demonstration*.
- Select one or more units to *team teach*.
- Collaborate with one or more team members to develop an *interdisciplinary project*.

"On one of our visits to a copy machine repair shop, we encountered a very negative supervisor. He was a strong, controlling, dictatorial leader who dominated over his employees. Several of the teachers were put off by the man and were eager to leave the worksite. They also saw no knowledge to be gleaned from this experience.

"I reflected on the situation and it dawned on me that several of my students were working for this man; he was their boss. They had to deal with his domination and paper-pushing attitude every day. I, as their teacher, have to prepare my students not only to do their job as a technician, but also to deal with the different personalities they will encounter daily. This man's management style is the reality of this worksite. I will be sure to include it in my employability skills lessons."

Don Foster,
Electronics Teacher

- Plan *student worksite learning experiences* (SWLEs) so that students can see for themselves how academics are used in the workplace. ***Helping Students Connect Academics to the Workplace: An Implementation Guide for Student Worksite Learning Experiences***, which was developed in conjunction with this guidebook, provides teachers and administrators with step-by-step assistance in setting up an SWLE program.

It is important to remember than ***any*** effort is better than ***no*** effort. So, start out small if you wish; experience some successes and expand your efforts over time.

Several examples of curriculum modifications that were made by the externship program pilot project teams are described below. Refer to ***Making Connections: A Curriculum Ideabook for Teachers of Applied Academics and Industrial & Engineering Systems*** for resources and additional examples of curriculum applications aimed at integrating vocational and applied academic instruction.

- The applied math teacher on the culinary arts team learned that it would be helpful to teach students to do restaurant tabulations and calculations in math class.
- Members of the electronics team decided that giving two grades for joint assignments would help students see the connection between vocational and academic skills. Since the externship experience, students writing papers on electronics topics are graded by the vocational teacher for content and the communications teacher for grammar and form.

The following reflections were made by pilot project participants at a debriefing meeting:

"At one large worksite, we were introduced to design engineers, repair technicians, and line assemblers. We were allowed to interview the workers as they worked. When we asked about the math required of employees at that site, each level of employee had a different opinion. The design engineers asked us to stress boolean algebra. The technicians said we should push sine, cosine, tangent, the trig. functions and formulas, and algebraic calculations. The line workers said to include measurements and three dimension coordinates x, y, and z. They all said to calculate to the thousandth place (.001). This will change our teaching because we were stopping at the hundredth place (.01). In all other cases, we were teaching what they asked for, so this feedback validated our curriculum."

Don Foster, Electronics Teacher

"My team partner and I both found that employability skills are what employers are most interested in and that technical skills have now taken a back seat to those related to employability. We plan to work together to improve the students' skills in these areas by setting up our classes more like the workplaces we visited. We plan to create flow charts, provide opportunities for more student teaming, give students more accountability for attendance, and reward positive attitudes."

Ken Kirby, Welding Teacher

"The worksite people genuinely welcomed us with many ideas and concerns. Talking to them, gaining insights into skills they felt were important, and then working with the vocational teachers to set up lesson plans is extremely valuable!"

Julie Bains, Communications Teacher

"The opportunity available to our correlated academic teachers was tremendous. They have been in the classroom, doing a great job of teaching our students the specific skills necessary for employment, and not understanding why. Seeing their eyes light up and listening to their comments as we visited our various industries was like watching our students as a light goes off and you see that "ah ha!" The interaction of the teachers and industry representatives was phenomenal. Because of the worksite externship experience, our applied academic teachers now have contacts, guest presenters, and references. In addition, they can now walk into their classrooms and discuss with their students about how the math and communications skills they are teaching are specifically used at worksites."

Larry Seibel, Agri-Technology Teacher

"Students in the agri-technology program may never have to write volumes of work, but they are expected to complete forms and write short reports. Being able to see exactly what kinds of written tasks our students would be doing clued me in to the writing skills needed as well as the detail of written tasks at work and the importance of writing skills in terms of financial costs to the business. I can now tell my students about the writing requirements in the workplace. Using official business forms and manuals will add validity to my instruction."

Julie Bains, Communications Teacher

"Overall, it was a great experience. The update on technology, the team "bonding," and the forms and x-rays we received were just a few of the great rewards of this teacher externship."

Cheryl Volkmer, DCHO Coordinator

"It was very beneficial to me to learn some of the practices that businesses engage in which could be applied in a school setting. For example, at a major aerospace plant, I learned that employees have an incentive for good attendance. Every 45 days employees can go up or down a step (on a 1-10 scale). Personal days can accumulate in addition to vacation days on this scale. With this system, employees are given the opportunity to improve their attendance every 45 days. I feel that this method of tracking attendance would be a motivator for students to come to school on a regular basis."

Susan Hyden, Communications Teacher

"While visiting a fine dining restaurant, the chef identified how his communication skills dictated the efficiency and success of the restaurant. He stated when he first took the position of chef, he had problems communicating with the front-of-the-house staff. He experienced a lot of turnover and dissatisfied employees. He then described how the general manager explained to him that his customer was the wait staff. If he communicated to them and sold them on his specials they would, in turn, sell them to the customers. He called this the "communication cycle" of a restaurant. He began to realize how his communication skills dictated the mood for the evening. He created kitchen etiquette policies for himself and others. Orders were repeated and followed with thank yous to show acknowledgment and respect. He spent time "selling" and communicating to the front staff what was on the menu. He forced himself to visit customers in the front-of-the-house and ask them how their meals were. He was convinced if the customer felt they knew him personally they would be more likely to return—even if they felt their meal was not as excellent as expected. He felt it was important to hear what his customers were saying. This experience displayed excellent communication skills and procedures in the kitchen that could be practiced in the lab and the classroom."

Susan Hyden, Communications Teacher

"We visited a moderate-sized heating and air conditioning company and talked with the general manager. He showed us a furnace model and all the technology involved in manufacturing, installing, and servicing such systems. He explained how the technicians calculate humidity, voltage, resistance, size, heat loss, and more before installing and setting up this system. This gave our team ideas for setting up labs that combine all of our talents. For example, we plan to use a model of an actual furnace to help students "see" concepts such as Ohm's law, gas laws, and Boyle's law."

Melissa Nelson, Mathematics Teacher

"At all worksites, the importance of teamwork was reinforced. This seemed to us to be an overwhelming change in how business is conducted in the workplace. We learned that teams had many responsibilities including developing their production schedules, ordering materials, and scheduling meetings.

"As a result of what we learned, we have focused many of our classroom activities on team development and team skills. Currently, I am working on four activities to be used in the applied communications classroom developed around the team concept. The vocational teacher is similarly developing more teamwork for the classroom and laboratory."

Cathy Deardoff, Communications Teacher

Step 16: Provide Ongoing Support for Externship Teams

Administrators and/or the administrative liaison can help ensure the success of externship team members' efforts by providing them with ongoing support through a wide range of activities; for example:

- Meet with teachers who participated in externships to learn what workplace applications have been made and to discuss what might be done to enhance the curriculm further.
- Conduct one or more curriculum-writing workshops, bringing in specialists to provide assistance.
- Conduct one or more lesson-planning workshops.
- Provide opportunities for team members to share what they have learned about integration of academics with other teachers.
- Arrange class schedules to provide common planning time so that vocational and academic teachers can collaborate.
- Arrange class schedules so that vocational and academic teachers can team teach.
- Arrange class schedules so that academic teachers can visit and observe vocational laboratories of their students or go on field trips with them.
- Release team members from some nonteaching responsibilities (e.g., hall duty, parking lot duty) to provide them with time to collaborate.
- Encourage teachers to submit proposals to make conference presentations concerning the integration of vocational and applied academics.

Reflections of Pilot Project Participants

If I were to do it again, I would have . . .

- taken my OCAPs along to the pre-visit conference.
- talked about what I'm teaching in class to see how it relates to the workplace.
- remembered to ask if I needed to bring safety glasses or to wear certain clothing.
- spent more time developing goals and researching the worksites and their products/services before the visits.
- prepared more specific questions (e.g., How does science apply to this job? How do you use stress to test this equipment?).
- been better prepared to be creative, flexible, and not limit myself or other team members.
- requested to have more one-on-one time with front-line workers.
- prepared a set of objectives to give to each person we talked with (ahead of time).
- had a counselor on our team.
- developed simple forms, schedules, and checklists to use at each worksite.
- made person-to-person contacts with the people who our team would be meeting with so that they'd have a clear picture of why we were coming and what we hoped to accomplish. I wish we would have called and/or sent written information to each person who would be meeting with us. We found that we couldn't rely on our contact person to convey detailed information to the people who met with us.
- picked better times to visit (because the school day doesn't always fit worksite schedules)
- done more to increase awareness of what schools teach (e.g., take samples of curriculum, materials, resumes, OCAPs, objectives, etc., from school).

- taken more initiative to explain what I wanted to see and do — instead of feeling intimidated and somewhat uncomfortable.
- requested that our team members do more hands-on activities during the externships.
- scheduled time at the beginning and end of each externship to discuss our plans and experiences.

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Appendix A

Tools for Selecting Worksite Externship Program Participants

Worksite Externship Program Application

The purpose of the Worksite Externship Program Application is to gather information about teachers, counselors, and administrators who are making formal application to the Worksite Externship Program.

Worksite Externship Interview Form

The purpose of the Worksite Externship Interview Form is to provide those selecting Worksite Externship Program participants with a structured way to conduct interviews and record information gathered during interviews.

The selection of worksite externship participants was covered in Step 2.

Worksite Externship Program Application
John Bryant Vocational School

To support the efforts of teachers and other educators in providing students with high quality, applied educational experiences, John Bryant Vocational School is sponsoring 10 educators to participate in an Externship Program. By making observations in local business, industry, health care, government, or social service agencies, **teams** of educators will learn about how academics are used in the workplace. After externships, educators will make modifications that reflect workplace applications. Team members will include one or more vocational teachers and academic teachers. Teams may also include home school counselors, job placement specialists, administrators, and school-to-work coordinators.

After attending an informational meeting, those interested in participating in the externship program should complete this application and return it to Mary Smith, Administrative Liaison for Externships, no later than October 1, 1996. If you have questions, contact Mary at 555-1111.

Name: ____ Date: ______________

Current Position: ____

Past Teaching Experience: ____

Previous Professional Nonteaching Work Experience: ______________________________

____

1. If you're an academic teacher, what program areas are you currently teaching?

2. Why do you want to participate in this externship? What do you hope to gain from the experience?

3. How might you teach differently as a result of your participation in the Worksite Externship Program?

4. The worksite externship is considered to be a team effort. How do you see your role on the externship team? What strengths do you bring to the team?

5. Additional information that you would like to provide to the selection committee (optional).

6. This externship includes 3-5 days of worksite visits. When would you prefer to complete your visits? (Check one or both.)

☐ during the school year ☐ during the summer

7. Are there specific teachers who you believe should be on your externship team? Why?

Worksite Externship Interview Form

Name: ______________________________ Date: ______________

Position: ______________________________

Interviewers: ______________________________

1. If you're an academic teacher, what program areas are you currently teaching?

2. Why do you want to participate in the Worksite Externship Program?

3. Why should you be selected? In what ways will the externship experience strengthen your teaching?

4. If chosen, what modifications would you like to make in the content you teach and/or the teaching strategies you use? Would you be willing to commit the time needed to modify your curriculum and teaching strategies?

5. The teacher externship is considered to be a team effort. How do you see your role on the externship team? What strengths would you bring to the team?

6. This externship includes 3-5 days of worksite visits. When would you prefer to complete your visits? (Check one or both.)

   ☐ during the school year ☐ during the summer

7. You may be visiting worksites that involve uncomfortable situations (e.g., blood exposure, industrial fumes). Would you have any problems with this?

8. Are there specific teachers who you believe should be on your externship team? Why?

Appendix B

Guidelines for Developing a Worksite Externship Team Implementation Plan

Team members should use the Guidelines for Developing a Worksite Externship Team Implementation Plan to develop a structure for their worksite externship visits. Each team should develop a comprehensive implementation plan. Team members may wish to seek input from previous externship participants, supervisors, and the administrative liaison.

Further information about developing an externship implementation plan is provided in Step 6.

Guidelines for Developing a Worksite Externship Team Implementation Plan

1. Names of team members:

2. Who will coordinate the team's efforts?

3. What occupational area will the team focus on?

4. What academic competencies will the team focus on?

5. What are the desired outcomes of the externship experience (e.g., what team members hope to learn at worksites; how team members hope to modify their instructional strategy; how team members hope to modify their curricula)?

6. What types of worksites might the team visit? Worksite visits should include the range of businesses that hire employees in the occupational area that the team is focusing on. Team members should consider a wide variety of characteristics of potential worksites including products or services offered, size, location, career paths, opportunities for advancement, management style, and appropriateness of worksite for future student worksite learning experience (SWLE), internship, and co-op placements.

7. Considering the desired outcomes and range of worksites that will be visited, how many days should the team spend doing externships? How long should externships be (e.g., half-day, full-day, two-day)?

8. When will the team do externship visits (e.g., during the school year or the summer, all in one week or spread out over a month or two)?

Appendix C

Worksite Contact Sheet

The Worksite Contact Sheet can be used by the administrative liaison and/or a designated member of the teaching team to record relevant information about potential externship sites. This information will be used when contacting worksite personnel, in following up with worksite contact people, and when determining other ways in which the employers might work with schools to provide students with work-based learning experiences.

Additional information about the use of Worksite Contact Sheets is provided in Step 8.

Worksite Contact Sheet

Company Name ____

Address ____

Phone Number ____

Name of Worksite Contact Person ______________________________

Title of Worksite Contact Person ______________________________

Phone Number ____________________ Fax Number ____________________

What are the company's major products or services?

How many people are employed at the worksite?

Is the company interested in hosting an externship team? ☐ yes ☐ no ☐ maybe

What kinds of learning opportunities can the worksite offer to team members?

Will additional information about the worksite be sent to the administrative liaison?

What kind of information (e.g., company profile sheets)? When?

Additional information:

Would the contact person or someone else from the worksite like to visit/tour the school? Who? When? Does this person wish to observe any specific program or speak with a particular administrator, director, coordinator, or teacher? (See the next page for additional suggestions.)

Because it may not be appropriate, in some cases, and may be too time-consuming, it is not recommended that the administrative liaison or team coordinator ask worksite contact people each of the following questions. However, any information that is gathered in the course of conversations and meetings should be recorded below.

The first column relates to the company's current participation with schools. In other words, do worksite representatives work with local schools in any of the following activities? Check all that might apply.

The second column relates to the company's interests in participating with schools in ways in which it currently does not participate. In other words, is the company interested in participating in any of the following school-business partnerships? Check all that might apply.

Currently participate?			Want to participate?			
yes	no	don't know	yes	no	don't know	
☐	☐	☐	☐	☐	☐	host student tours/field trips
☐	☐	☐	☐	☐	☐	participate in a teacher-employee job swap
☐	☐	☐	☐	☐	☐	provide career speakers
☐	☐	☐	☐	☐	☐	host teacher externships
☐	☐	☐	☐	☐	☐	provide employees who will mentor teachers
☐	☐	☐	☐	☐	☐	invite teachers into your training classes
☐	☐	☐	☐	☐	☐	provide employees who will mentor students
☐	☐	☐	☐	☐	☐	provide job shadowing opportunities for students
☐	☐	☐	☐	☐	☐	provide employees to mentor internship students
☐	☐	☐	☐	☐	☐	employ co-op students
☐	☐	☐	☐	☐	☐	employ graduates
☐	☐	☐	☐	☐	☐	serve on advisory committees
☐	☐	☐	☐	☐	☐	serve as a judge for VSO competition events

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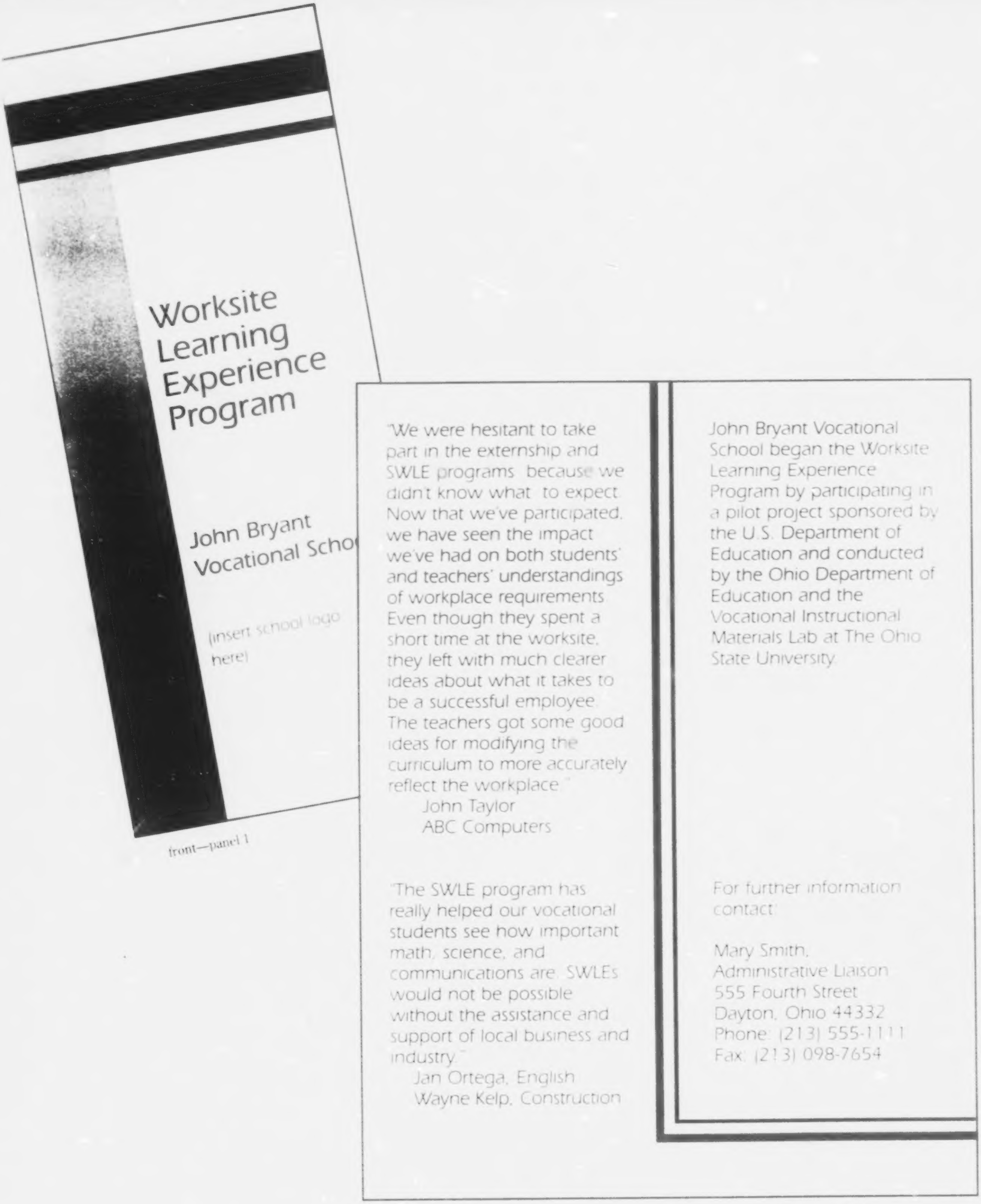
Appendix D

Publicity for the Worksite Externship Program

The following materials may provide the administrative liaison with models of materials that can be used to promote the teacher worksite externship program to potential business partners, the school community, and the overall community. Externship coordinators and participants should take every opportunity to let others know about externship activities and results.

- Promotional Brochure
- Pre-Visit Press Release
- Post-Visit Press Release
- Newsletter Article



Worksite Learning Experience Program

John Bryant
Vocational Scho

(insert school logo here)

front—panel 1

"We were hesitant to take part in the externship and SWLE programs because we didn't know what to expect. Now that we've participated, we have seen the impact we've had on both students' and teachers' understandings of workplace requirements. Even though they spent a short time at the worksite, they left with much clearer ideas about what it takes to be a successful employee. The teachers got some good ideas for modifying the curriculum to more accurately reflect the workplace."

John Taylor
ABC Computers

"The SWLE program has really helped our vocational students see how important math, science, and communications are. SWLEs would not be possible without the assistance and support of local business and industry."

Jan Ortega, English
Wayne Kelp, Construction

front—panel 2

John Bryant Vocational School began the Worksite Learning Experience Program by participating in a pilot project sponsored by the U.S. Department of Education and conducted by the Ohio Department of Education and the Vocational Instructional Materials Lab at The Ohio State University.

For further information contact:

Mary Smith,
Administrative Liaison
555 Fourth Street
Dayton, Ohio 44332
Phone: (213) 555-1111
Fax: (213) 098-7654

front—panel 3

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About the Program

The Worksite Learning Program involves two components. First, teams of vocational and academic teachers participate in Teacher Worksite Externships. They visit local business and industry to observe ways in which math, science, and communications are used at worksites. Upon their return, they work together to modify the curriculum and develop hands-on teaching strategies that reflect real-life situations in the workplace.

Second, students participate in Student Worksite Learning Experiences (SWLEs). They visit local business, industry, and community-based organizations to see for themselves how employees use math, science, and communications skills on the job.

Students and teachers can't do it alone. They need the help of local business and industry.

back—panel 1

We Need Your Help!

The vocational and academic teachers at John Bryant Vocational School are asking local business, industry, and community-based organizations to contribute a small amount of time to host students and/or teams of teachers to make worksite visits.

What is Involved?

Business,industry, and organizational participants will be asked to do the following:

- Designate a contact person to work with the school in arranging visits.
- For SWLEs, select one or more employees who are interested in supervising visiting students.
- Host students and/or teachers for worksite visits.
- Complete a short written program evaluation.

back—panel 2

How Can Business, Industry, and Community-Based Organizations Participate in the Worksite Learning Program?

Simply contact the primary coordinator of the program:

Mary Smith
Administrative Liaison
555 Fourth Street
Dayton, Ohio 44332

Phone:(213) 555-1111
Fax:(213) 098-7654

(Insert a photo or school logo here)

back—panel 3

Pre-Externship Press Release

(SCHOOL LETTERHEAD)

RELEASE DATE: Immediate

CONTACT: Mary Smith
(614) 555-1111

LOCAL WORKSITES DEMONSTRATE THE 3 Rs FOR TEACHERS

DAYTON— Many students don't see the connection between school and work. The Teacher Worksite Externship program is designed to help. John Bryant Vocational School has teamed with local business and industry to help teachers see how math, science, and communications are used in the workplace. Teachers will modify their curriculum to reflect worksite practices.

This month, teachers of electronics, culinary arts, and marketing students will be guided through activities at seven local worksites. In the fall, through the Student Worksite Learning Experience (SWLE) program, students in these vocational programs will participate in related activities at the same worksites.

Benefits include improved curriculum and enhanced school-worksite relationships.

To participate in this or other school-worksite partnerships, contact Mary Smith, Administrative Liaison, at 555-1111.

Post-Externship Press Release

(SCHOOL LETTERHEAD)

RELEASE DATE: Immediate

CONTACT: Mary Smith
(614) 555-1111

LOCAL WORKSITES ARE A HIT WITH TEACHERS

DAYTON— Seven local companies provided John Bryant Vocational School teachers with opportunities to see how the 3 Rs are used at work. Through the Teacher Worksite Externship program, students in electronics, culinary arts, and marketing programs participated in activities at seven local worksites during the past month. Their students will make similar visits to these worksites in the fall.

The companies that participated in the program were: ABC Electronics, Joe's TV and VCR Repair, Metropolitan Hospital, Mom's Restaurant, Ace Catering, You're Safe Insurance, Smith's Department Store, and Market Research, Inc.

Students, teachers, and worksite participants give the experience high marks! Teachers have modified the curriculum to reflect workplace practices. Business and industry have learned new ways to work with schools for the benefit of their future employees. Student motivation is increased.

To participate in this or other school-worksite partnerships, contact Mary Smith, Administrative Liaison, at 555-1111.

Editors: A photo/caption of program participants at work accompanies this press release.

School

Newsletter Article

COLLABORATION WITH LOCAL WORKSITES ENHANCES VOCATIONAL PROGRAMS

Teacher worksite externships help vocational and applied academic teachers observe and experience how academics are used in the workplace. John Bryant Vocational School has worked in partnership with seven local companies to conduct teacher externships in the areas of electronics, culinary arts, and marketing. Each teacher team took part in activities at three worksites to learn how math, science, and communications are used at work. In the fall, the students in those programs will make similar visits to these companies.

The worksite partners are ABC Electronics, Joe's TV and VCR Repair, Metropolitan Hospital, Mom's Restaurant, Ace Catering, You're Safe Insurance, Smith's Department Store, and Market Research, Inc.

The teachers believe that their participation has helped them to be more effective at making learning meaningful for students. Their worksite visits resulted in modified curriculum, increased use of hands-on activities, and development of interdisciplinary projects and assignments. In addition, worksite representatives learned how schools and employers can collaborate to help students attain skills they need to be successful in the workplace.

Plans are underway for three different vocational programs to participate in SWLEs and teacher externships next year. For information about participating, contact Mary Smith, Administrative Liaison, in the Job Placement Office.

Appendix E

Pre-Visit Correspondence

Letter of Introduction

This is a letter that externship visit coordinators may wish to use as a model. It is meant to introduce targeted worksites to the worksite externship program before a one-on-one contact is made.

Confirmation Letter

The confirmation letter is meant to put into writing the oral arrangements that were made between the externship visit coordinator and the worksite contact person.

Related information is covered in Step 8.

Letter of Introduction

(SCHOOL LETTERHEAD)

August 8, 1997

Ms. Janet Crane
CCC VCR
Industrial Drive
Dayton, Ohio 45005

Dear Ms. Crane,

We need your help. Through the teacher worksite externship program, five John Bryant teachers who work with junior electronics students are visiting several local worksites. The goal of the program is to gain an understanding of how math, science, and communication skills are used in the workplace. With the insights gained from the worksite visits, teacher team members will work together to modify in the curriculum to reflect more accurately how academics are used in the workplace.

We would like to request your participation in a one-day activity during the week of October 20, 1997. During that day, we hope you will provide the teachers with the following:

- a basic introduction to your company,
- time to speak with front-line employees, and
- opportunities to participate in hands-on activities.

This is the first of a two-part project, which is described in the enclosed brochure. In the second part of the project, teachers will work together to arrange for student worksite learning experiences (SWLEs). During SWLEs, students will make visit local worksites to make observations about how academics are used in the workplace. It has been shown that students benefit from this type of experience in many ways, including increased motivation in academic classes.

It is our hope that you will be able to provide a meaningful experience for our teacher team. I'll call you next week so that we can discuss the worksite externship program and the possibility of your participation. We look forward to working with you and hope your busy schedule will allow our students to visit with you.

Sincerely,

Mark Ritchie
Applied Communications Teacher and Team Coordinator

Enclosure: **Worksite Learning Brochure**

Confirmation Letter

(SCHOOL LETTERHEAD)

August 8, 1997

Ms. Janet Crane
CCC VCR
Industrial Drive
Dayton, Ohio 45005
Dear Ms. Crane,

Thank you for accepting our invitation to participate in John Bryant Vocational School's teacher worksite externship program. Externship experiences provide opportunities for vocational and applied academic teachers to understand how math, science, and communications are used at worksites similar to those for which they are preparing students to work.

The electronics teacher team will plan to spend Wednesday, May 1, at your worksite. They will arrive at security desk in the main lobby 8:00 a.m. We look forward to learning about how your company operates through conversations with managers and a tour of the plant. In addition, we will observe and speak with front-line workers about the ways win which they use science, math, and communications at work. We also hope to have meaningful, hands-on experiences at your worksite in order to see for ourselves how academics are used on the job.

We appreciate your interest and willingness to participate in the worksite externship program and look forward to meeting with you on May 1. If you have any questions or anticipate any problems, please contact Mark Ritchie at 555-1111.

Sincerely,

Mark Ritchie, Applied Communications Teacher and Team Coordinator

James Alexander, Electronics Teacher

Appendix F

Tools for Worksite Visits

Worksite Interview Questions

This is a list of questions that worksite externship team members may wish to use to help them in determining the questions they want to ask employees at worksites.

Externship Visit Log

This log provides worksite externship participants with a methodical way to record observations and reflections for each visited worksite.

Communications Checklist

This checklist, developed by pilot project participants, was designed to provide team members with a methodical way to collect information and materials at each worksite that was visited.

Related information is covered in Step 10.

Worksite Interview Questions

This is a list of questions that worksite externship team members might ask employers and front-line employees. Questions about specific occupations, expectations of employees, and ways in which academics are applied in the workplace are included. Teachers and/or students are encouraged to include some of these questions when developing an interview sheet for students to use during SWLEs.

Questions about the worksite

- Who are your main customers or clients?
- What computer software is most used here? What computer applications do you suggest the school have students learn?
- What are your company's policies concerning dress, attendance, and attitudes?
- What is the role of employee organizations/unions in your company?
- What percentage of your workforce has a four-year degree? two-year degree? high school diploma? no high school diploma?
- Does your company offer a tuition reimbursement program?
- Does your company conduct drug testing?

Questions about expectations of employees in general

- What are this worksite's expectations of employees concerning attitudes, attendance, and accountability?
- What are the three most important characteristics or skills that are expected of entry-level employees?
- What is the most valuable skill an employee can bring to your department? Why?
- How are employees' skills evaluated before they are hired or promoted?
- What is a reason that an employee would be fired from his or her job?
- What kinds of testing or training are provided for entry-level employees?

Questions about how academics are applied in the workplace

- How important do you think it is for an employee to use good **communication** skills? Can you give an example of how front-line employees use oral and written communication while doing their jobs?
- What are the communication skills that seem most important at this worksite? For example, is persuasion/ selling, conflict resolution, process management used at the worksite? Describe ways in which these skills are used.
- How important do you think it is for an employee to use good **math** skills? Can you give an example of how front-line employees use math while doing their jobs? (Ask specific questions such as "How do you determine dosages?")
- How important do you think it is for an employee to use good **science** skills? Can you give an example of how front-line employees use science while doing their jobs? (Ask specific questions such as "Can you give me an example of how you use problem-solving skills?")
- Is a calculator readily available for employees to use or must they do calculations in their heads?
- What measuring tools do employees need to use/read?
- What would be a problem that you might face in your daily work? How would you solve it?
- Which of your high school academic classes best prepared you for your present job? Why?
- Which academic course(s) do you wish you would have studied harder in or taken more of? Why?
- Do you think there is a direct relationship between an employee's ability to maintain pace with changing technology and an employee's ability to apply academic skills?

Questions about specific occupations

- What is your job title?
- What tasks do you spend most of your time doing?
- What kind of education and training was required for your job?
- What were you least prepared for when you started this job?
- Knowing what you know now, what do you wish you would have paid more attention to while you were still in school?
- What are the main personality traits required for your job (e.g., patience, interpersonal communication, ability to work independently and take initiative)?
- Why did you decide to become a ______________?
- What do you like best about your job?
- What do you like least about your job?
- What is the career ladder for your job?
- Are there any social roles and/or social demands connected with your job? What are they? How are they an advantage or disadvantage?

Questions about curricular improvement

- What changes do you recommend we make in our curriculum to prepare employees that will meet your needs and expectations?
- What can we do to provide you with the type of employee you need?
- How can your company work with our program to meet your expectations of entry-level employees?
- What do you recommend we do to teach work ethic?
- What is the one thing you wish we would teach our students?

Externship Visit Log

The Externship Visit Log was designed for use by team members to record their observations at worksites. Externship participants should complete a log sheet for each worksite that is visited.

Team Member's Name ______________________________

Name of Worksite Visited ______________________________

Address of Worksite Visited ______________________________

Name and Title of Worksite Contact Person ______________________________

Date of Visit ______________________________

Primary Product or Service of the Worksite ______________________________

1. What was your schedule of events? In other words, list what you did during your worksite visit.

2. How did you observe *science* used at the worksite? Give examples.

3. How did you observe *math* used at the worksite? Give examples.

(continued on the next page)

4. How did you observe *communications* used at the worksite? Give examples.

5. Based on what you learned at this worksite, write the three most important skills that workers need to be successful on the job. Explain.

   a.

   b.

   c.

6. Do you think the visit was worthwhile? Explain.

7. Was this a good place to observe how academics are used in the workplace? Explain.

Communications Checklist

Date of Worksite Visit ____________________

Teacher's Name ____________________

Worksite ____________________

Worksite Liaison's Name ____________________

Major Products or Services ____________________

Number of Employees ____________________

Instructions: Look for ways in which communications are used at the worksite. If possible, gather samples of written communications that are found. Use the space to the right of each item to write notes and comments.

Forms of Communication.

Communication Protocol:

Notes and Comments

- ☐ Telephone Procedure
- ☐ Customer Service/Public Relations
- ☐ Other

Forms:

- ☐ Job Application
- ☐ Employee Evaluation
- ☐ Time Card
- ☐ Memo
- ☐ Telephone Message
- ☐ Welding Procedure Sheet
- ☐ Job Ticket
- ☐ Job Time Ticket
- ☐ Order Form
- ☐ Purchase Request
- ☐ Invoice
- ☐ Insurance Form
- ☐ Injury Report
- ☐ Other

Company Documentation/Procedures:

- ☐ Policy Manual
- ☐ Job Descriptions
- ☐ Vacation
- ☐ Safety (general)

Forms of Communication

Notes and Comments

Company Documentation/Procedures (continued):

- ☐ Equipment
- ☐ Codes and Regulations
- ☐ Other

Visual Aids:

- ☐ Posted Signs
- ☐ Symbols Used
- ☐ Other Graphics or Charts

Technology:

- ☐ Process Used
  - FCAW/GTAW
  - Robotics/automatic welding
  - Other
- ☐ Fabrication Equipment
- ☐ PC Use
  - Word processing
  - Referencing
  - Bookkeeping
  - Other
- ☐ Other

Shop/Department Procedures:

- ☐ Product Evaluation/Inspection
- ☐ Safety (OSHA guidelines)
- ☐ First Aid
- ☐ Repairing/Replacing Equipment
- ☐ Hazardous/Contaminated Waste Disposal (MSDS-Materials Safety Data Sheet)
- ☐ Other

Vocabulary:

- ☐ Workplace (technical terms, jargon)
- ☐ Words Containing Prefixes, Suffixes, and/or Root Words
- ☐ Acronyms
  - OSHA
  - Others:
- ☐ Flow Chart Possibilities
- ☐ Departments
- ☐ Employer-Employee Responsibilities
- ☐ Processing of an Order
- ☐ Other

Developed by Cathy Deardoff and Ken Kirby, Manchester Technical Center

Appendix G

Tools for Evaluating the Worksite Externship Program

The following evaluation forms are meant to solicit information from team members and worksite representatives about the effectiveness of the program:

- Team Member Evaluation Form
- Worksite Contact Person Evaluation Form

Additional information about evaluating the worksite externship program is covered in Step 14.

Team Member Evaluation Form
Teacher Worksite Externship Program

Now that you've completed your worksite externship visits, let us know what you thought about hem. Respond to each statement below by **circling** 1 if you strongly disagree, 2 if you disagree, 3 if ou are neutral, 4 if you agree, and 5 if you strongly agree. Return it to ______________________
name
by ______________________.
date

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I received adequate information to prepare me for my externship visits.	1	2	3	4	5
2. I believe I was able to attain my desired outcomes.	1	2	3	4	5
3. I learned how academic skills are used at worksites.	1	2	3	4	5
4. I learned what the general expectations are for being a good employee.	1	2	3	4	5
5. The externship visits helped team members begin to work together effectively.	1	2	3	4	5
6. I would recommend participation in worksite externships to other teachers.	1	2	3	4	5

Write brief responses to the following questions. Use the back or an additional sheet if needed.

7. What was the most important thing you learned during your worksite visits?

(continued on the next page)

8. What changes do you plan to make in **what** you teach as a result of the worksite visits?

9. What changes do you plan to make in **how** you teach as a result of the worksite visits?

10. Will your team members plan to collaborate in any way as a result of externship experiences?

11. What suggestions do you have for modifying the worksite externship program—before, during, and after the worksite visits?

Teacher Worksite Externship Program
Worksite Contact Person Evaluation Form

Thank you for being a worksite externship partner! Please complete this brief evaluation of your experience so we can continue to improve the program.

Return it to ______________________ at ______________________________________
name *address*

no later than ________________. For your convenience, a return envelope has been provided.
date

Please rate the following by **circling** 1 if you strongly disagree, 2 if you disagree, 3 if you are neutral, 4 if you agree, and 5 if you strongly agree.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I received adequate information to prepare me for working with visiting teachers.	1	2	3	4	5
2. I believe I was able to help teachers attain their externship goals.	1	2	3	4	5
3. The worksite externship program was successful.	1	2	3	4	5
4. I would be interested in participating in the worksite externship program next year.	1	2	3	4	5
5. I would recommend participation in the worksite externship program to others.	1	2	3	4	5

Write brief responses to the following questions. Use the back or an additional sheet if needed.

6. What did you like best about the externship program?

(continued on the next page)

7. How could we have better supported you throughout the externship experience?

8. What about the program would you do the same way next year?

9. What would you do differently next year?

10. What suggestions would you make for the externship coordinators/facilitators for future years?

12. Might you or others in your company like to learn more about additional business-school partnership opportunities? If so, check the partnership ideas listed below about which you would like to receive more information.

   ☐ host student tours/field trips
   ☐ participate in a teacher-employee job swap
   ☐ provide career speakers
   ☐ host student worksite learning experiences
   ☐ provide employees who will mentor teachers
   ☐ invite teachers into your training classes
   ☐ provide summer work experiences for teachers
   ☐ provide job shadowing opportunities for students
   ☐ provide employees to mentor internship students
   ☐ employ co-op students
   ☐ employ graduates
   ☐ serve on an advisory committee
   ☐ serve as a judge for Vocational Student Organization (VSO) competition events

Contact person's name ____________________

Name of company ____________________

Phone number____________________

Appendix H

Tools for Recognizing and Acknowledging Contributions of Business Partners

The following materials may provide externship coordinators and participants with models of materials that might be used to recognize and acknowledge the contributions that business partners have made to the worksite externship program.

- Thank-You Letter from the Administrative Liaison
- Thank-You Letter from Team Members
- Certificate of Recognition

Related information is covered in Step 12.

Thank-You Letter from the Administrative Liaison

(SCHOOL LETTERHEAD)

August 8, 1996

Mr. Steven Jones
All-Seasons Heating and Cooling
555 South Street
Columbus, Ohio 43215

Dear Steven,

On behalf of John Bryant Vocational School, I would like to thank you for your support of the Teacher Worksite Externship program. I appreciated your eagerness in working with me and team members to plan the opportunities for teachers to learn about how academics are used at All-Seasons Heating and Cooling. In addition, the preparatory work that you did with other employees at All-Seasons resulted in very positive experiences for our teachers. Please accept the enclosed certificate as a small token of our appreciation for the contributions you and others in your company have made to the success of the program.

As you know, we conducted an evaluation of the program by gathering information from worksite contact people and team members. Upon initial review of the evaluations, it appears that most participants were very satisfied with the program. Once the evaluation results are summarized, I will send you a complete report.

In an effort to keep you informed about activities at John Bryant Vocational School, I will put your name on our school mailing list. The teachers and I plan to keep you informed about curricular changes that are made as a result of their worksite visits. In addition, you may want to participate in other partnership activities.

It is my hope that we will be able to continue our partnership. With the continued support of businesses like yours, we hope to steadily improve our programs for quality achievement by our students. Thank you for participating in this initiative!

Sincerely,

Ms. Mary Smith
Administrative Liaison

Thank-You Letter from Team Members

(SCHOOL LETTERHEAD)

August 8, 1996

Ms. Janet Crane
CCC VCR
Industrial Drive
Dayton, Ohio 45005

Dear Ms. Crane,

We can't thank you enough for participating in the Teacher Worksite Externship Program. By hosting our electronics team for a one-day visit to your business, you have helped us to gain an understanding of the importance and application of English skills to the workplace.

We are especially appreciative of the time and care you took to select caring worksite personnel to meet with us. Your extra attention resulted in our having very positive experiences at CCC VCR.

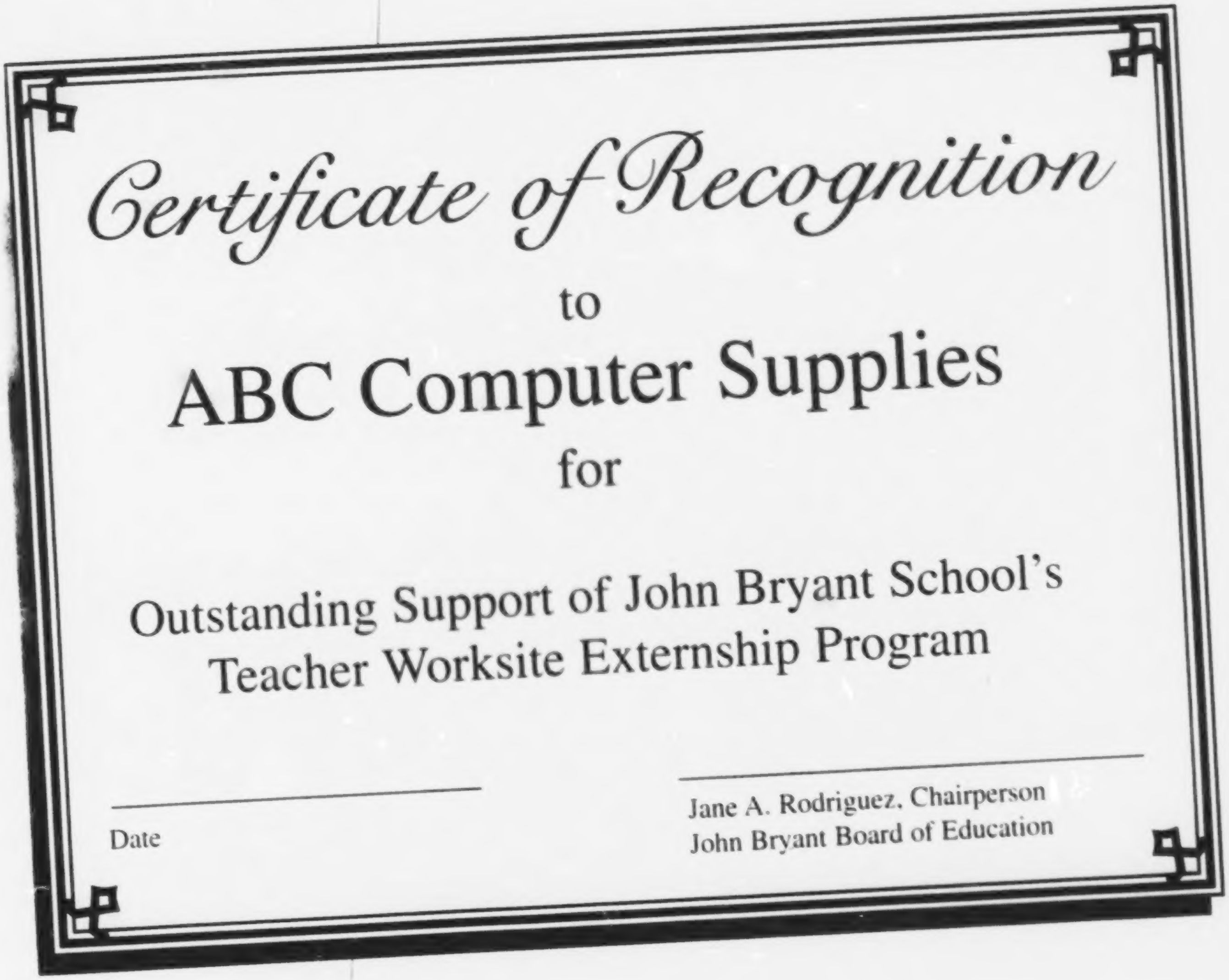
We are enclosing a copy of a plan for an interdisciplinary project that we developed after making our worksite visits. If you have suggestions regarding this or other projects, we welcome your input.

Once again, thank you for your support. It is our hope that we will be able to work together in other business-school partnerships.

Sincerely,

James Alexander Electronics Teacher	Mark Ritchie Applied Communications Teacher

Enclosures: Worksite Learning Brochure
Project Description



Certificate of Recognition

to

ABC Computer Supplies

for

Outstanding Support of John Bryant School's
Teacher Worksite Externship Program

Date

Jane A. Rodriguez, Chairperson
John Bryant Board of Education

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Appendix I

Integrated Instructional Plan

The Integrated Instructional Plan provides teachers with an outline for developing activities that integrate vocational and academic concepts. An example, which was developed by pilot project participants, follows.

Information about making modifications in curriculum to reflect worksite externship experiences is covered in Step 15.

Integrated Instructional Plan

Occupational Area: Agri-Technology

Academic Area: Correlated Math

Activity Topic/Skill Area: Bin Volumes

Description of Workplace Context: In crop production, students must be able to determine the amount of storage needed for grain and the amount of grain left in a storage facility to sell.

Description of Related Classroom Activity:

- Students will measure the bin's circumference and height.
- Students will calculate the volume.
- Students will use *Doanes Facts for Farmers* to look up the information needed to determine the volume of bushels of wheat, corn, soybeans, etc.

Materials/Equipment Needed: Grain storage facility, measuring tape, *Doanes Facts for Farmers*

Estimated Time Required: 2 class periods

Authors: Waid Lyons, Larry Seibel, Beth Fisherback, and Julie Bains, teachers at Miami Valley CTC and Teacher Worksite Externship pilot project participants

Appendix J

Agenda Outline for Worksite Externship Visits

The following agenda, developed by pilot project participants, is meant to provide team members with ideas for structuring worksite externship visits.

Related information is covered in Steps 7, 8, and 10.

Agenda Outline for Worksite Externship Visits

I. Meet as a team prior to the visit. (½-1 hour)

II. Visit worksite.
  a) Conference with 1-3 key employees (e.g., accounting officer, plant manager, production manager, etc.) (½-1 hour)
  b) Tour of the facilities (½-1 hour)
  c) Lunch at the worksite to observe and question employees about how math, science, and communications skills are used at the worksite
  d) Hands-on work in 1-3 departments (2-3 hours)

III. Meet in relaxed, off-campus site to discuss and reflect on the day's activities and to plan upcoming worksite visits. (At least 1 hour)

Appendix K

Resource List

The following organizations may provide schools with additional information and support for developing partnerships with businesses.

Association of School/Business Partnership Directors
This professional association provides directors of school district partnership programs with opportunities for networking and professional growth. The association sponsors workshops and enables members to use a resource bank in Pittsburgh to obtain such materials as professional articles, training modules, evaluation tools, and data on exemplary programs.
P. O. Box 923, Norwalk, CT 06852

Center for Workforce Preparation and Quality Education
Established by the U. S. Chamber of Commerce in 1990, the center serves as a clearinghouse for local chambers of commerce and business communities interested in improving and reforming education. Write for a publications list. 1615 H Street NW, Washington, DC 20062-2000; (202) 463-5525.

Center on Education and Work
This organization develops and distributes materials on topics related to school-to-work, equity, and career planning. The center also coordinates a national seminar on Teacher Learning in the Workplace and Community each fall. University of Wisconsin- Madison, 964 Educational Sciences Building, 1025 W. Johnson St., Madison, WI 53706-1796; (608) 263-3696.

InfoMedia, Inc.
This publisher specializes in newsletters, journals, books, and directories on business-education partnerships and sponsors a national partnerships awards competition. Call or write for a sample issue of *Business-Education Report or Partnerships in Education Journal.* P. O. Box 210, Ellentown, FL 34222-0210; (813) 776-2535.

National Association for Industry-Education Cooperation
NAIEC advocates industry-education collaboration in school improvement, preparation for work through career education, and human resource and economic development. The association provides technical assistance in establishing formally structured industry-education councils composed of leaders in business, education, labor, government, and the professions.
235 Hendricks Blvd., Buffalo, NY 14226-3304; (716) 834-7047.

National Association of Partners in Education NAPE is a membership organization representing schools, businesses, community groups, educators, and individuals who work together as partners to enhance the education of children. Materials and training for school-business-community relationships and volunteer and partnership initiatives are available. 209 Madison Street, Suite 401, Alexandria, VA 22314; (703) 836-4880.

National Mentor Network
Developed by the National Media Outreach Center with support from the U.S. Department of Labor, the National Mentor Network helps refer business volunteers interested in mentoring to schools in their area. Write or call for the names of contacts in your area and a list of print and video resources on mentoring. 4802 Fifth Avenue, Pittsburgh, PA 15213; (412)622-1584/1491.

Vocational Instructional Materials Laboratory
The VIML at The Center on Education and Training for Employment (a unit of The Ohio State University's College of Education) offers a wide variety of materials to assist vocational and applied academic teachers. The *Targets for Instruction* series, which was developed by ACT, would be especially helpful as teachers develop applied curricula. In addition, *Targets for Learning: Applied Technology* and *Targets for Learning: Applied Mathematics* include many practice problems and specific instructional strategies to prepare students for ACT Work Keys tests. The VIML also facilitates the development, validating, and updating of OCAPs. 1900 Kenny Road, Columbus, OH 43210; (614) 292-5001; fax (614) 292-1260; sales 1-800-848-4815, ext. 2-4277.

Appendix L

Samples of Forms Collected from Worksites

The following forms were collected by worksite externship program pilot project participants. Team members plan to use these forms to make classroom and laboratory instruction as realistic as possible.

RECEIVING TICKET

№

DATE ______________________

SUPPLIER ______________________

REC'D BY ______________________

CODE Office Use Only	PRODUCT	AMOUNT RECEIVED		LOT NUMBER
		No. bags/ Bag Size	Total #	

KOENIG EQUIPMENT, INC.

DAILY TIME RECORD

Name			Date
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Work Order Number	Cust	Pld	Start
	Warr	Rec	Stop
	Mod	Oth	
Total Hours Worked			Proof Total
Reg.	O.T.		

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TRACTOR SALES, INC.

AGCO ALLIS
HESSTON
NEW HOLLAND

SOLD TO

PAGE

CASH | CHG. | F.O.P.

ACCT. NO.

SALESMAN | PURCHASE ORDER NO. | R.O. NO. | PL# | INVOICE DATE | TIME | INVOICE NO.

QUANTITIES				PART NUMBER	DESCRIPTION	VENDOR BIN LOC.	PRICES		
ORDERED	B/O	SHIPPED	✓						

SHIP
VIA

Thank You

TERMS: NO FINANCE CHARGE is made on accounts paid within 30 days of purchase. Accounts not paid within 30 days will, on the billing date following, be charged a minimum of $1.00 or 2% each month, which is 24% ANNUAL PERCENTAGE RATE.

RESTOCKING FEE - 30% for SPECIAL ORDERED PARTS; 20% for STOCKED PARTS
MUST BE RETURNED WITHIN 30 DAYS FOR REFUND!

The undersigned hereby certifies that the article of tangible personal property purchased under this certificate were purchased for use directly in farming, agriculture, horticulture, or floriculture.

Received by ____________________

DESCRIPTION	ACCOUNT	AMOUNT
PARTS		
FREIGHT		
SALES TAX		
PLEASE PAY THIS TOTAL ►		

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AGCO

DEUTZ ALLIS

HESSTON

FORD

CUST ORDER NO

	ORDER WRITTEN BY
	RECEIVED
	PROMISED

TYPE OF MACHINE	HOURMETER OR MILEAGE	PHONE
MAKE	SERIAL NO	
MODEL	MOTOR NO	

QTY	PART NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT

BROUGHT FORWARD FROM REVERSE OR NAEDA 455 REPAIR ORDER SUPPLEMENT

WORK DONE BY | TOTAL PARTS

OUTSIDE WORK

BY | TOTAL OUTSIDE WORK

WORK TO BE DONE

LABOR ONLY
MATERIAL ADDITIONAL

LUBRICATE ☐ CHANGE OIL ☐ FLUSH TRANS ☐ FLUSH DIFF ☐ CLEAN ☐ PAINT ☐ AMOUNT

MILEAGE ______ @ ______ $

OTHER MATERIALS	
GALS FUEL @	
QTS OIL @	
LBS GREASE @	
TOTAL OTHER MATERIALS	

TOTAL SERVICE	
TOTAL PARTS	
TOTAL OUTSIDE WORK	
TOTAL OTHER MATERIALS	
DYNAMOMETER	
PICKUP & DELIVERY	
SUBTOTAL	
TAX (WHERE APPLICABLE)	
GRAND TOTAL	

I hereby authorize the repair work to be done as described above on the machine(s) named hereon. All repair parts are to be billed at your regular prices. I agree to pay cash for such repair parts and labor on delivery of machine(s) or on terms satisfactory to you and until paid in full any unpaid balance shall constitute a lien on this machinery. I further agree that you will not be held responsible for loss or damage to such machinery from fire, theft or other causes beyond your control.

DATE ______ SIGNED ______

ORIGINAL ESTIMATE $ ______

AUTHORIZED ADDITIONS $ ______ Date Called ______ Time Called ______ Called By ______

All parts installed are new unless specified otherwise

SAVE OLD PARTS ☐ DISCARD OLD PARTS

NAEDA SERVICES, INC

DYNAMOMETER CHART ON REVERSE SIDE

ST. LOUIS, MISSOURI 63127-1081 PRINTED IN U.S.A. FORM NAEDA 41

Agricultural Equipment

Work Order 5969

Name

Address

Town

Phone #

Date Received | **Date Promised**

Supervisor	Machine Size	Model/Serial No	Hr	Engine Serial Number

Reported Problem/Flat Rate Code	**Hours**	**Work Accomplished**

John Deere Parts	36600		Set Up and Delivery Labor	38201	
Misc. Service Supplies	37701		Reconditioning Labor	38202	
Customer Labor	38100		Warranty Labor	38300	
Program Labor	38100		Modification Labor	38400	
Travel Time	38100		Service Vehicle Inc	39200	
Diagnostic Time	38100		O/S Labor and Materials	39400	
				Total ▶	

Torq Guard		Hygard		Antifreeze		Other		Total Vehicle Mileage		
Type	Qty	Type	Qty	Type	Qty	Type	Qty	S/Call	Towing	Hauling

I hereby authorize the above repair work to be done along with the use of necessary materials. You and your employees may operate above machine for purposes of testing, inspection or delivery at my risk. I agree to pay cash on delivery of machine or on terms satisfactory with you and until paid in full an express mechanics lien is acknowledged on above machine to secure the amount of repairs thereto. It is understood that this company assumes no responsibility for loss or damage by theft or fire to machine placed with them for storage, sale, repair or while field testing.

Signature

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APPLICATION FOR EMPLOYMENT

An Equal Opportunity Employer

PERSONAL INFORMATION

Date ____________________

Name ____________________
Last First Middle

Social Security Number ____________________

Address Street ____________________

City ____________________ State __________ Zip __________

Phone No. ____________________ Referred By ____________________

EMPLOYMENT DESIRED

Position ____________________ Date You Can Start __________ Salary Desired __________

Are You Presently Employed? __________ If so, may we contact your present employer? ____________________

Ever Applied to this Company Before? ____________________ When? ____________________

Are You Willing to Work Overtime? ____________________

EDUCATION

	Name & Location of School	No. of Years Attended/ Highest Degree Attained	Subjects Studied
Elementary School			
High School			
Trade, Business or Correspondence School			
College			

GENERAL

Subjects of Special Study or Research Work ____________________

Are you a citizen of the United States? __________ U.S. Military or Naval Service Rank __________

Present Membership in National Guard or Reserves ____________________

Inc., provides equal employment opportunities to all qualified persons, consistent with applicable federal, state and municipal equal employment opportunity laws prohibiting discrimination based on race, sex, age, disability, religion, ancestry, color, or national origin

LAST

FIRST

MIDDLE

125

SHIPPING LOG

Date	Trailer	Customer	Gathering Out	Gathering In	Loading	Weight
6-17	P.U	Mont Eagle Products	JDA			
6-17	P.U	Countrymark	TR	TR		31,855
6-17	P/U	Vet Poultry			JDH	1,050
6-17	P/U	Dawe's				1000
6-17	P/U	Lambright's			T. Lee	38,000" Blk 500" Bags
6-17	P/U	Otis Bryant	—	—	T. Lee	50,000
6-17	68=	Hastings		—	T. Lee	48,400
6-17	P/U (DAN ANDREW)	FARM #3		—		2000
6-17	P.U	Nutri Ration's			JDA	4000
6-17	P/U (HALL FARMS)	Mont. Eagle			JDA JS	44,500 ~~43,585~~
6-17	P.U	Amer. Feed + Farm			JDA	2,100
6-17	P-U	Gro-Tec		—		3,512
6-17	P.U	Super-Kwik		—		3,070
6-17	P/U (Ludwig)	DEKALB SWINE		—		44,000
6/17	P/U	ROWE PMX.	TR	TR		10,395

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INTRODUCTORY PERIOD EVALUATION REPORT

At the end of the thirtieth (30th) and sixtieth (60th) day of the Introductory period, the following questions should be answered by the supervisor and reviewed with the employee in private. The form should be signed by the employee and the supervisor, then placed in the employee's personnel file.

EMPLOYEE'S PROGRESS

1. How do you rate this employee's training program progress in these areas:

Job Knowledge - How well employee knows job requirements.

(Circle One) Above Average Satisfactory Unsatisfactory

Job Skills - How well employee can do the job.

(Circle One) Above Average Satisfactory Unsatisfactory

Quality - Attention to quality requirements.

(Circle One) Above Average Satisfactory Unsatisfactory

Quantity - How well employee meets production standards.

(Circle One) Above Average Satisfactory Unsatisfactory

On a scale of 1 to 5, with 5 being the highest, rate the following:

2. **Safety:** Does employee follow safety rules? 5 4 3 2 1
3. **Initiative:** Is employee a self-starter? 5 4 3 2 1
4. **Dependability:** Can you count on this employee to follow instructions accurately? 5 4 3 2 1
5. **Conduct:** Does employee follow company rules? 5 4 3 2 1
6. **Cooperation:** Does employee try to work as a team member? 5 4 3 2 1
7. **Attitude Toward Job:** Does employee seem to like present work? 5 4 3 2 1
8. **Attitude Toward Company:** Does employee seem to feel "at home" in present job? 5 4 3 2 1
9. Does employee get along well with fellow workers? 5 4 3 2 1
10. Do you think employee is satisfied with the job? 5 4 3 2 1
11. How do you rate this employee on the job as compared with other employees with equal experience? 5 4 3 2 1
12. **Attendance:** How many days has employee been absent or tardy since hired?

ABSENT: ____________ TARDY: ____________ TOTAL: ____________

(Circle One)

5 - EXCELLENT:	Work consistently exceeds standards of performance in all areas.
4 - VERY SATISFACTORY:	Work is above average. Exceeds standards of performance in most areas. However, there is room for improvement in other areas of measurement.
3 - SATISFACTORY:	Work meets basic standards of performance. There are opportunities for continued improvement in several areas.
2 - UNSATISFACTORY:	Fails to meet standards of performance in certain areas. Deficient areas must be improved to meet standards of performance.
1- LESS THAN SATISFACTORY:	Performance is significantly below standards. Performance must be improved to satisfactory level within specific time limit.

Comments by Supervisor and/or employee: ______________________________

____

____

____

____

____

Supervisor's Signature: ______________________________ Date: ______________

Employee's Signature: ______________________________ Date: ______________

Employee Refused to Sign (Witness): ______________________________ Date: ______________

LOST TIME MAINTENANCE REPORT

TO BE COMPLETED BY PRODUCTION DEPARTMENT

DATE ____________ **SHIFT** ____________ **BY** ______________

DESCRIPTION OF COMPLAINT AND PIECE OF EQUIPMENT CAUSING DOWN TIME ____

____

____

____

TIME DOWN ________________ **TIME UP** ___________________

TIME LOST ________________

PRODUCT MANAGER _______________________

TO BE COMPLETED BY MAINTENANCE DEPARTMENT

DESCRIBE REPAIRS MADE OR ACTION TAKEN ______________________________

____

____

____

BY ________________

DESCRIBE ACTION TAKEN TO ALLEVIATE DOWN TIME IN THIS AREA IN THE FUTURE ____

____

____

MAINT. SUPERVISOR ______________________

PRODUCT CONTROL

DATE:

PRODUCT:

PROBLEM:

RECOMMENDATIONS:

REPORTED TO:

CHECKED BY:

COMMENTS:

SHIFT MAINTENANCE REPORT

Date: ______________________

By: ______________________ Shift: ______________________

Does Quality Control need to be notified of this repair? ______________________

Equipment to be repaired:

(Describe problem with sufficient detail for Maintenance Department)

Repairs made:

DRUG USAGE INVENTORY

DATE ______________________ SHIFT ______________________

DRUG	DRUG LOT#	BEG. INV.	IN	OUT	PREMIX/BASE MIX CONTROL NO.	END. INV.	SCALE CK. WT.	END. LOT#

Appendix M

Excerpts from an OCAP

Occupational Competency Analysis Profiles (OCAPs) provide educators with a list of occupationally specific skills (or competencies) that are verified by individuals from business, industry, and community-based organizations who currently practice the occupation. Each OCAP identifies the occupational, academic, and employability skills needed to enter a given occupation or occupational area. OCAP documents also contain Academic Job Profiles determined by the ACT Work Keys System.

In order to provide you with an idea of the information about occupation-related academic skills that can be gleaned from OCAPs, the following pages contain excerpts from the Business Administration and Management OCAP and Job Profile. Externship team members may get copies of OCAPs from the administrative liaison or the Vocational Instructional Materials Laboratory. (See the resource list in Appendix K.)

Additional information about how OCAPs might be used in structuring worksite externships and developing integrated instruction is covered in Steps 3, 6, 10, and 15.

OCAP

OCCUPATIONAL COMPETENCY ANALYSIS PROFILE

BUSINESS ADMINISTRATION AND MANAGEMENT

VERIFICATION PANEL

Terrie Huston, CPS, *Secretarial Consultant*, Columbus, Ohio

Chuck Johnson, *National City Bank, Northwest*, Toledo, Ohio

Christina Lombardo, *Checkfree Corporation*, Columbus, Ohio

Jerry Reeder, *G.T.E. North Telephone Operations*, Marion, Ohio

Michael L. Schlecht, *Whirlpool Corporation*, Marion, Ohio

Thomas G. Schneider, *Investors Asset Management*, Medina, Ohio

Chris Spengler, CPS/CAM, *The University of Toledo*, Toledo, Ohio

Walter G. Williams, *Organizational Transfer and Outplacement Consultant*, Cincinnati, Ohio

Vocational Education

Division of Vocational and Adult Education
Ohio Department of Education

VIML
VOCATIONAL INSTRUCTIONAL MATERIALS LABORATORY

Vocational Instructional Materials Laboratory
Center on Education and Training for Employment

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Verification Panels .... Inside back cover

© 1996 by the Vocational Instructional Materials Laboratory

Vocational Instructional Materials Laboratory
Center on Education and Training for Employment - The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210

Introduction

What is an OCAP?

According to the *Action Plan for Accelerating the Modernization of Vocational Education: Ohio's Future at Work*—

> A comprehensive and verified employer competency list will be developed and kept current for each program
>
> —Imperative 3, Objective 2—

The Occupational Competency Analysis Profiles (OCAPs) are the Ohio Division of Vocational and Adult Education's response to that objective.

OCAPs are competency lists—verified by expert workers—that evolve from a modified DACUM job analysis process involving business, industry, labor, and community agency representatives from throughout Ohio. The OCAP process is directed by the Vocational Instructional Materials Laboratory located at The Ohio State University's Center on Education and Training for Employment.

How is the OCAP used?

Each OCAP identifies the occupational, academic, and employability skills (or competencies) needed to enter a given occupation or occupational area. The OCAP not only lists the *competencies* but also clusters those competencies into broader *units* and details the knowledge, skills, and attitudes (*competency builders*) needed to perform each competency.

Within the competency list are two levels of items: core and advancing. *Core items*, which are essential for entry-level employment, are required to be taught and are the basis for questions on the Ohio Vocational Competency Assessment (OVCA). *Advancing items* (marked with an asterisk) are those needed to advance in a given occupation.

School districts may add as many units, competencies, and/or competency builders as desired to reflect local employment needs, trends, and specialties. Local advisory committees should be actively involved in the identification and verification of additional items. Vocational and applied academic instructors will be able to formulate their courses of study using the varied contents of the OCAP and will be able to monitor competency gains via the new criterion-referenced competency testing program, which is tied to the competencies identified on the OCAP.

Excerpts from the OCAP for Businessss Administration and Management

Unit 2: Management and Supervision

Competency 2.1: Maintain a safe working environment

Competency Builders:

2.1.1 Access needed safety information using company and manufacturers' references (e.g., procedural manuals, documentation, standards, work flowcharts)
2.1.2 Identify health and safety standards established by government agencies
2.1.3 Explain relationships between health, safety, and productivity
2.1.4 Comply with government and/or company rules and regulations related to health and safety
2.1.5 Identify preventive measures for dealing with the main causes of accidents in the facility
2.1.6 Identify preventive measures for dealing with the main causes of health problems (e.g., carpal tunnel syndrome) in the facility
2.1.7 Identify preventive measures for dealing with violations of personnel security
2.1.8 Ensure maintenance of a clean work area
2.1.9 Perform safety audits and inspections
2.1.10 Solve safety problems using problem-solving, decision-making, and critical thinking skills

Competency 2.3: Perform staffing functions

Competency Builders:

2.3.1 Develop plans and procedures for identifying staffing needs
2.3.2 Implement staffing needs plan
2.3.3 Develop job descriptions
2.3.4 Develop hiring and promotion policies and procedures in compliance with state and federal employment laws*
2.3.5 Prepare guidelines for selecting most qualified person for specific position
2.3.6 Comply with state and federal employment laws and company hiring policies and procedures
2.3.7 Identify resources for locating candidates
2.3.8 Recruit employees
2.3.9 Identify most appropriate candidates for position (e.g., appropriate skills, team fit, contractual specifications)
2.3.10 Interview candidates for position
2.3.11 Follow up on information provided on job applications (e.g., contact references listed)
2.3.12 Recommend or select applicants for employment
2.3.13 Orient new employees
2.3.14 Maintain personnel records
2.3.15 Comply with labor contracts
2.3.16 Comply with Workers' Compensation guidelines
2.3.17 Provide for unconventional work schedules (e.g., flex time, shared positions)
2.3.18 Identify additional or alternative employee benefits that the company might consider furnishing to employees and their families

*Advancing

Competency 2.4: Manage employee performance

Competency Builders:

2.4.1 Apply management/leadership style appropriate for situation
2.4.2 Communicate performance expectations
2.4.3 Create/maintain an environment supportive of productivity
2.4.4 Monitor employee performance
2.4.5 Maintain performance records
2.4.6 Evaluate employee performance
2.4.7 Provide constructive criticism and feedback
2.4.8 Counsel employees (e.g., concerning personal issues, career objectives, drug and alcohol abuse, violence)
2.4.9 Discipline employees
2.4.10 Make recommendations based on employee performance (e.g., transfer, promote, dismiss)
2.4.11 Manage the change process (e.g., for right sizing, technologies, globalization, retraining)
2.4.12 Adhere to company policies and federal laws concerning nondiscrimination and harassment
2.4.13 Demonstrate sensitivity to diversity, including gender, culture, race, language, physical and mental challenges, and family structures
2.4.14 Demonstrate appreciation of diversity, including gender, culture, race, language, physical and mental challenges, and family structures
2.4.15 Apply knowledge of motivational theories in selecting management techniques (e.g., Maslow, Herzberg)
2.4.16 Solve personnel problems using problem-solving, decision-making, and critical thinking skills

Competency 2.7: Perform routine management functions

Competency Builders:

2.7.1 Guide the management process using problem-solving, decision-making, and critical thinking skills
2.7.2 Develop management objectives
2.7.3 Conduct task analyses
2.7.4 Create/maintain organizational and/or departmental charts
2.7.5 Maintain procedure manuals
2.7.6 Solve space utilization problems using math and problem-solving skills
2.7.7 Follow chain of command
2.7.8 Maintain confidentiality
2.7.9 Clarify company policies and procedures
2.7.10 Communicate cost containment factors
2.7.11 Prepare budgets
2.7.12 Monitor budget activity
2.7.13 Prepare managerial reports
2.7.14 Analyze daily production reports
2.7.15 Represent the organization to the public

*Advancing

Unit 3: Accounting and Financial Functions

Competency 3.1: Apply mathematical skills

Competency Builders:

3.1.1 Solve addition, subtraction, multiplication, and division problems manually
3.1.2 Solve addition, subtraction, multiplication, and division problems using a calculator
3.1.3 Convert/reduce fractions
3.1.4 Compute percentages and ratios
3.1.5 Solve business-related problems using algebraic formulas
3.1.6 Determine whether sufficient, insufficient, or extraneous information is given for solving a problem
3.1.7 Solve finance charge and annual percentage rate problems using a calculator
3.1.8 Solve compound interest problems
3.1.9 Construct tables or graphs using computer software
3.1.10 Interpret tables and graphs (line, circle, and bar)
3.1.11 Apply business statistics
3.1.12 Compute business and financial data
3.1.13 Perform data analysis and probability*

Competency 3.2: Perform general accounting functions

Competency Builders:

3.2.1 Access needed information using company and manufacturers' references (e.g., procedural manuals, documentation, standards, work flowcharts)
3.2.2 Apply generally accepted accounting principles and procedures in various business environments
3.2.3 Apply basic managerial accounting concepts
3.2.4 Select computer software appropriate for the function to be performed
3.2.5 Select mathematical skills appropriate for the function to be performed
3.2.6 Process receivables
3.2.7 Process payables
3.2.8 Process purchases
3.2.9 Monitor expense accounts
3.2.10 Prepare budgets
3.2.11 Make financial decisions using problem-solving, decision-making, and critical thinking skills

Competency 3.3: Perform payroll functions

Competency Builders:

3.3.1 Access needed information using manufacturers' manuals, documentation, terminology, and other reference materials
3.3.2 Comply with company policies and procedures related to payroll
3.3.3 Apply generally accepted accounting principles and procedures
3.3.4 Select mathematical skills appropriate for the function to be performed
3.3.5 Select computer software appropriate for the function to be performed
3.3.6 Process payroll documents
3.3.7 Calculate employee earnings and deductions
3.3.8 Prepare payroll checks
3.3.9 Complete payroll records
3.3.10 Monitor personnel costs
3.3.11 Prepare payroll tax reports

Unit 4: Information Technology

Competency 4.1: Demonstrate knowledge of computerized information processing

Competency Builders:

4.1.1 Identify applications of computers in business
4.1.2 Explain data processing concepts
4.1.3 Interpret information processing terminology
4.1.4 Interpret software licensing agreements
4.1.5 Identify computer hardware components and software
4.1.6 Identify current operating systems
4.1.7 Locate needed information on computer printouts
4.1.8 Interpret information on computer printouts
4.1.9 Locate errors on computer printouts
4.1.10 Identify the procedures for installing equipment and software

Competency 4.2: Perform basic word processing functions

Competency Builders:

4.2.1 Access needed information using company and manufacturers' references (e.g., procedural manuals, documentation, standards, work flowcharts)
4.2.2 Follow written and/or oral specifications
4.2.3 Apply basic communication skills
4.2.4 Apply basic computer skills
4.2.5 Create files using word processing functions
4.2.6 Input data using word processing functions
4.2.7 Process data using word processing functions
4.2.8 Output data using word processing functions
4.2.9 Verify accuracy of output
4.2.10 Integrate word processing files with other application software
4.2.11 Perform desktop publishing functions

Competency 4.3: Perform basic spreadsheet functions

Competency Builders:

4.3.1 Access needed information using company and manufacturers' references (e.g., procedural manuals, documentation, standards, work flowcharts)
4.3.2 Follow written and/or oral specifications
4.3.3 Apply mathematical skills (e.g., algebraic, statistical)
4.3.4 Apply basic computer skills
4.3.5 Create files using spreadsheet functions
4.3.6 Input data using spreadsheet functions
4.3.7 Process data using spreadsheet functions
4.3.8 Output data using spreadsheet functions
4.3.9 Verify accuracy of output
4.3.10 Integrate spreadsheet files with other application software

*Advancing

Unit 5: General Office Functions

Competency 5.1: Perform telephone operations

Competency Builders:

5.1.1 Access needed information using company and manufacturers' references (e.g., procedural manuals, documentation, standards, work flowcharts)
5.1.2 Employ telephone etiquette
5.1.3 Place local calls
5.1.4 Place national and international calls using direct dial, telephone credit card, or operator assistance
5.1.5 Verify information provided by other party
5.1.6 Take phone messages
5.1.7 Send/receive messages via mobile communications
5.1.8 Send/receive messages via voice messaging
5.1.9 Send/receive messages via teleconferencing
5.1.10 Maintain lists of needed numbers (e.g., phone, fax, e-mail)

Competency 5.2: Maintain files

Competency Builders:

5.2.1 Access needed information using company and manufacturers' references (e.g., procedural manuals, documentation, standards, work flowcharts)
5.2.2 Select filing/storage system appropriate for materials to be filed (e.g., manual, automated, microfilm)
5.2.3 Organize files (e.g., alphabetic, numeric, alpha-numeric, geographic, or subject filing system)
5.2.4 Index files
5.2.5 File documents and integrated media (e.g., electronic resumes, videos, disks)
5.2.6 Secure files for legality and confidentiality
5.2.7 Retrieve documents and integrated media
5.2.8 Update files
5.2.9 Identify legal and other considerations related to records retention
5.2.10 Determine retention schedule
5.2.11 Purge files according to retention schedule
5.2.12 Streamline files (e.g., consolidate, archive, destroy)

Competency 5.3: Maintain supplies and forms

Competency Builders:

5.3.1 Prepare budget for supplies and forms
5.3.2 Prepare cost justification for the purchasing of supplies and forms
5.3.3 Prioritize requests
5.3.4 Order supplies and forms
5.3.5 Verify supplies and forms received
5.3.6 Store supplies and forms in a secure location
5.3.7 Issue supplies and forms
5.3.8 Inventory supplies and forms
5.3.9 Purge supplies and forms
5.3.10 Prepare inventory reports

Unit 6: Communications

Competency 6.1: Apply communication skills

Competency Builders:

6.1.1 Guide communication activities using problem-solving, decision-making, and critical thinking skills
6.1.2 Guide communication activities using established rules for grammar, spelling, and sentence construction
6.1.3 Evaluate audience
6.1.4 Determine means of communication appropriate to audience and situation (e.g., telephone, meeting, electronic mail, written communications)
6.1.5 Determine timing of communications
6.1.6 Follow written and/or oral instructions
6.1.7 Apply creativity in oral and written communications
6.1.8 Proofread documents
6.1.9 Edit documents using proofreading symbols
6.1.10 Correct documents
6.1.11 Interpret oral, written, and nonverbal communication
6.1.12 Interpret charts, graphs, schematics, illustrations, tables, and other visual aids
6.1.13 Use nonverbal communication to reinforce intended message
6.1.14 Present messages in a form that assists recipient's understanding (e.g., write and speak concisely, write legibly)
6.1.15 Demonstrate active listening skills
6.1.16 Secure needed information using questioning techniques
6.1.17 Participate in group discussions and meetings
6.1.18 Support communication using charts, graphs, schematics, illustrations, tables, and other visual aids
6.1.19 Assess communication skills (verbal, nonverbal, written, oral)
6.1.20 Refine communication skills

Competency 6.2: Maintain open communications

Competency Builders:

6.2.1 Employ active listening skills
6.2.2 Evaluate audience
6.2.3 Build personal communications
6.2.4 Develop communications with superiors
6.2.5 Develop communications with subordinates
6.2.6 Develop communications with peers
6.2.7 Develop communications with other departments
6.2.8 Develop communications with customers
6.2.9 Build trust through communications
6.2.10 Employ negotiation skills
6.2.11 Employ conflict resolution skills
6.2.12 Determine sensitivity of subject
6.2.13 Determine timing of communications
6.2.14 Develop an approachable atmosphere

*Advancing

The Purpose of Job Profiling

Developed by American College Testing (ACT), the purpose of the Job Profiling process is to identify the **level** of applied academic skills that, according to business and industry, students must master to qualify for and be successful in their occupation of choice. The results of Job Profile "leveling" can help teachers to better target instruction toward their students' needs.

As part of the Ohio Vocational Competency Assessment (OVCA) program, the Vocational Instructional Materials Laboratory (VIML) at The Ohio State University has conducted Job Profiling workshops in which representatives of business, industry, labor, and community organizations identified the academic skill levels needed by entry-level workers in the occupational areas covered by the Occupational Competency Analysis Profiles (OCAPs). Job Profiling for all OCAPs was sponsored by the Ohio Department of Education, Division of Vocational and Adult Education.

OVCA—What Is It?

The Ohio Vocational Competency Assessment (or OVCA) package consists of two assessment components: OCAP and Work Keys. Together they measure entry-level occupational, academic, and employability skills. All OVCA items are criterion-referenced, use a multiple-choice format, and are administered using a traditional paper-and-pencil method. The OVCA is designed to do the following:

- Provide one dimension of a multi-assessment strategy for career passport credentialing
- Evaluate learner readiness for jobs requiring specific occupational, academic, and employability skills
- Assist educators in curriculum development
- Provide state-aggregated learning gain scores to comply with regulations in the Carl D. Perkins Vocational and Applied Technology Act of 1990

OCAP. The OCAP component of OVCA assesses students in occupational skills—employment requirements—in a particular occupational area. Assessment is based on the core competencies identified through the OCAP process, and each multiple-choice assessment item is correlated to those essential competencies.

Work Keys. The Work Keys component, developed by ACT, measures students' applied academic skills. All OVCA packages contain two Work Keys assessments:

- *Applied Mathematics* measures students' ability to analyze, set up, and solve math problems typically found in the workplace.
- *Locating Information* measures students' ability to use graphic documents to insert, extract, and apply information.

In addition, certain taxonomies will use the following Work Keys assessments:

- *Reading for Information* will be used by Business, Marketing, Home Economics, Health Education, and Cosmetology taxonomies.
- *Applied Technology* will be used by Trade and Industrial and Agricultural Education taxonomies.

Other optional Work Keys assessments, not included in the basic OVCA package, are *Teamwork*, *Listening*, and *Writing*.

Each Work Keys assessment is further broken down into four to five levels of achievement, with higher numbers indicating higher achievement in the assessed skill (descriptions of the levels for each Work Keys assessment are provided on pages 3-9). For each academic skill, the Job Profiling process identifies the level required for successful entry into an occupational area.

Job Profiling—How It Works

VIML's Job Profiling process was initiated by mailing surveys to current workers in OCAP occupations all across Ohio. The survey's purpose: to have actual workers in specific occupations rate job tasks according to each task's frequency and criticality—that is, the amount of time spent performing each task relative to other tasks and the importance of each task to overall job performance.

To complete the survey, participants examined OCAP competencies for their occupation. Based on the survey's results, VIML staff produced a list of the most critical competencies in each occupation.

The next stage of Job Profiling was to convene committees of subject-matter experts to perform "leveling," which involved the following tasks:

- Examining the frequency and criticality competency lists for an occupation
- Reviewing the levels associated with each of the seven Work Keys academic skills: *Locating Information, Reading for Information, Applied Mathematics, Applied Technology, Listening, Writing,* and *Teamwork*
- Identifying the level of skill students must master relative to each Work Keys academic skill in order to successfully perform the occupational competencies

Finally, in 1995 and 1996, the initial leveling of Work Keys academic skills for the occupational areas were revalidated by a new panel of expert workers convened to update the OCAPs.

Academic Job Profile:
Business Administration and Management

Applied Mathematics

7
5
4
3

Locating Information

6
4
3

Reading for Information

7
5
4
3

Applied Technology

6
5
3

Teamwork

6
4
3

Listening

5
3
2
1

Writing

4
3
2
1

NOTE: Definitions of each level in each of the seven academic skill areas are provided on the pages that follow.

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Levels of Work Keys Defined

The skills needed to achieve each level for each of the seven Work Keys* academic skills are as follows.

Applied Mathematics

Applied Mathematics measures skill in applying mathematical reasoning to work-related problems. There are five levels of complexity, 3 through 7, with Level 3 being the least complex and Level 7 the most complex. The levels build on each other, each incorporating the skills at the preceding levels.

Level 3

- Perform basic mathematical operations (addition, subtraction, multiplication, and division) and conversions from one form to another, using whole numbers, fractions, decimals, or percentages.
- Translate simple verbal problems into mathematical equations.
- Directly apply logical information provided to solve problems, including those with measurements and dollars and cents.

Level 4

- Perform one or two mathematical operations (such as addition, subtraction, or multiplication) on several positive or negative numbers. (Division of negative numbers is not covered until Level 5.)
- Add commonly known fractions, decimals, or percentages (e.g., ½, .75, 25%) or add three fractions that share a common denominator.
- Calculate averages, simple ratios, proportions, and rates, using whole numbers and decimals.
- Reorder verbal information before performing calculations.
- Read simple charts or graphs to obtain information needed to solve a problem.

Level 5

- Look up and calculate single-step conversions within English or non-English measurement systems (e.g., converting ounces to pounds or centimeters to meters) or between measurement systems (e.g., converting centimeters to inches).
- Make calculations using mixed units (e.g., hours and minutes).
- Determine what information, calculations, and unit conversions are needed to find a solution.

Level 6

- Calculate using negative numbers, fractions, ratios, percentages, mixed numbers, and formulas.
- Identify and correct errors in calculations.
- Translate complex verbal problems into mathematical expressions, using considerable setup and multiple-step calculations or conversions.

Level 7

- Solve problems requiring multiple steps of logic and calculation.
- Solve problems involving more than one unknown, nonlinear functions (e.g., rate of change), and applications of basic statistical concepts (e.g., error of measurement).
- Locate errors in multiple-step calculations.
- Solve problems with unusual content or format, or with incomplete or implicit information.

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